SHARP SERVICE MANUAL

No. 00ZUXB20U/SME

Illustration: UX-B20U

FACSIMILE

MODEL UX-B20 UX-B25

MODEL	SELECTION CODE	DESTINATION
UX-B20	U	U.S.A.
UX-B20/B25	C	Canada

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Parts Guide

Parts marked with " ⚠ " are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !
Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandoren.

(English) Caution !
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

(Finnish) VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

(French) ATTENTION
Il y a danger d'explosion s' il y a remplacement incorrect
de la batterie. Remplacer uniquement avec une batterie du
même type ou d'un type recommandé par le constructeur.
Mettre au rébut les batteries usagées conformément aux
instructions du fabricant.

(Swedish) VARNING
Explosionsfare vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

(German) Achtung
Explosionsgefahr bei Verwendung inkorrekter Batterien.
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder
vom Hersteller empfohlene Batterien verwendet werden.
Entsorgung der gebrauchten Batterien nur nach den vom
Hersteller angegebenen Anweisungen.

PRECAUTIONS FOR USING LEAD-FREE SOLDER

● Employing lead-free solder

The **Control PWB, LIU PWB, Power PWB and Operation Panel PWB** of this model employs lead-free solder. This is indicated by the "LF" symbol printed on the PWB and in the service manual.

The suffix letter indicates the alloy type of the solder.

Example:

Indicates lead-free solder of tin, silver and copper.

● Using lead-free solder

When repairing a PWB with the "LF" symbol, only lead-free solder should be used. (Using normal tin/lead alloy solder may result in cold soldered joints and damage to printed patterns.)

As the melting point of lead-free solder is approximately 40°C higher than tin/lead alloy solder, it is recommended that a dedicated bit is used, and that the iron temperature is adjusted accordingly.

● Soldering

As the melting point of lead-free solder (Sn-Ag-Cu) is higher and has poorer wettability (flow), to prevent damage to the land of the PWB, extreme care should be taken not to leave the bit in contact with the PWB for an extended period of time. Remove the bit as soon as a good flow is achieved.

The high content of tin in lead free solder will cause premature corrosion of the bit.

To reduce wear on the bit, reduce the temperature or turn off the iron when it is not required.

Leaving different types of solder on the bit will cause contamination of the different alloys, which will alter their characteristics, making good soldering more difficult.

It will be necessary to clean and replace bits more often when using lead-free solder. To reduce bit wear, care should be taken to clean the bit thoroughly after each use.

CHAPTER 1. GENERAL DESCRIPTION

[1] Specifications

Print cartridge yield*: **(at 4% coverage**)**	Initial cartridge Quality mode OFF: Approx. 300 letter pages Quality mode ON: Approx. 200 letter pages Replacement cartridge: SHARP **UX-C70B** Quality mode OFF: Approx. 600 letter pages Quality mode ON: Approx. 400 letter pages
Paper tray capacity:	Letter: Approx. 100 sheets (20-lb.copier paper at room temperature; maximum stack height should not be higher than the line on the tray) Legal: 10 sheets Recommended paper weight: 20-lb. Copy Bond
Recording system:	Thermal inkjet
Print resolution:	600 x 600 dpi
Effective printing width:	8.0" (203 mm) max.
Memory size*:	448 KB (approx. 24 average pages)
Modem speed:	9,600 bps with auto fallback to lower speeds
Transmission time*:	Approx. 15 seconds
Compatibility:	ITU-T (CCITT) G3 mode
Compression scheme:	MR, MH, MMR
Automatic dialing:	30 numbers
Telephone function:	Yes (cannot be used if power fails)
Applicable telephone line:	Public switched telephone network
Reception modes:	TEL/FAX
Automatic document feeder:	Letter/A4: 10 sheets max. (20 lb. paper) Legal: 5 sheets max.
Input document size:	**Automatic feeding:** Width: 5.8 to 8.5" (148 to 216 mm) Length(10 sheets): 5.5 to 11" (140 to 279 mm) Length(5 sheets): 5.5 to 14" (140 to 356 mm) **Manual feeding:** Width: 5.8 to 8.5" (148 to 216 mm) Length: 5.5 to 23.6" (140 to 600 mm)
Effective scanning width:	8.3" (210 mm) max.
Scanning resolution:	**Horizontal:** 203 pixels/inch (8 dots/mm) **Vertical:**Standard: 98 lines/inch (3.85 lines/mm) Fine/Halftone: 196 lines/inch (7.7 lines/mm) Super fine: 391 lines/inch (15.4 lines/mm)
Halftone (grayscale):	64 levels
Contrast control:	Automatic/Dark selectable
Copy function:	Single / Multi (99 copies/page)
Display:	16-digit LCD display
Power requirements:	120 V AC, 60 Hz
Power consumption:	Stand-by: 4.5 W Maximum: 30 W
Operating temperature:	60 - 90°F (15 - 32°C)
Humidity:	25 - 80 % RH
Dimensions (without attachments):	Width: 13.9" (354 mm) Depth: 9.7" (247 mm) Height: 5.4" (138 mm)
Weight (without attachments):	Approx. 7.0 lbs. (3.2 kg)

*Quality mode is initially turned on. To turn off Quality mode.
**Based on Sharp Standard Chart at standard resolution, excluding time for protocol signals (i.e., ITU-T phase C time only).

As a part of our policy of continuous improvement, SHARP reserves the right to make design and specification changes for product improvement without prior notice. The performance specifications figures indicated are nominal values of production units. There may be some deviations from these values in individual units.

[2] Operation panel

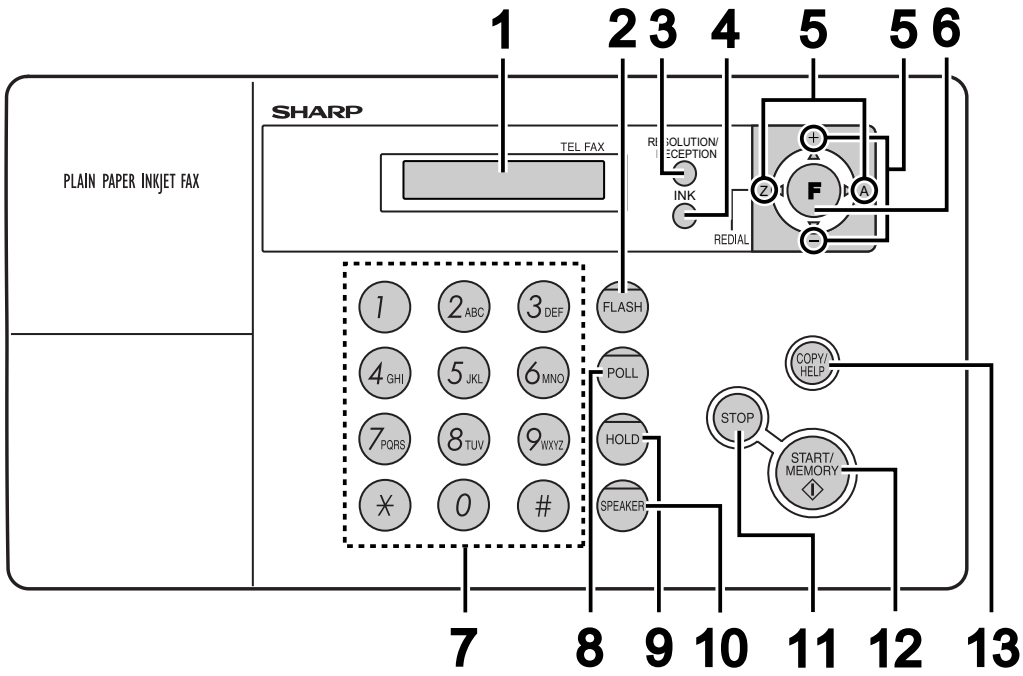


Illustration: UX-B20U

1. Display
This displays messages and prompts to help you operate the machine.

2. FLASH key
This key is used for Call Waiting and other special service that requires subscription from your phone company. Your phone company will provide you with details on how to use the key.

3. RESOLUTION / RECEPTION MODE key
When a document is in the feeder, press this key to adjust the resolution for faxing or copying. At any other time, press this key to select the reception mode (an arrow in the display will point to the currently selected reception mode).

4. INK key
Press this key before installing or replacing the print cartridge to move the print cartridge holder to the replacement position.

5. Arrow keys
Use these keys to scroll through and select setting, and to search for auto-dial numbers.

6. FUNCTION key
Press this key to followed by the arrow keys select special functions and settings.

7. Number key
Use these keys to dial numbers, and enter numbers and letters when storing auto-dial numbers.

8. POLL key
Press this key after dialing another fax machine to receive a document (previously loaded in the other machine's feeder) without assistance from the operator of the other machine.

9. HOLD key
Press this key to put the other party on hold during a phone conversation.

10. SPEAKER key
Press this key to listen to the line and fax tones through the speaker when faxing a document.

11. STOP key
Press this key to cancel operations before they are completed.

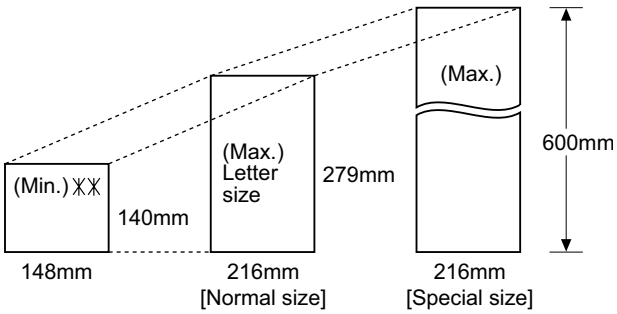
12. START/MEMORY key
Press this key after dialing to begin fax transmission. Press this key before dialing to send a fax through memory. The key can also be pressed in the date and time display to show the percentage of memory currently used.

13. COPY/HELP key
When a document is in the feeder, press this key to make a copy of a document. At any other time, press this key to print out the Help List, a quick reference guide to the operation of your fax machine.

[3] Transmittable documents

1. Document Sizes

Normal size	Width	148 - 216 mm
	Length	140 - 279 mm



※※ Use document carrier sheet for smaller documents.

- With special sizes, only one sheet can be fed into the machine at a time. Insert next page into feeder as current page is being scanned.

2. Paper Thickness & Weight

	10 sheets	1sheet(Manual)
Paper weight	70 kg 80 g/m^2	70 kg ~ 135 kg 52 g/m^2 ~ 157g/m^2
Paper thickness (ref.)	0.1 mm	0.1 mm ~ 0.18mm
Paper size	LGL (216 mm x 355.6 mm) A4 (210 mm x 297 mm) LTR (216 mm x 279 mm)	
Feeder capacity	A4/LTR: 10 sheets max. LGL : 1 sheets max.	

3. Document Types

- Normal paper

  Documents handwritten in pencil (No. 2 lead or softer), fountain pen, ball-point pen, or felt-tipped pen can be transmitted.

  Documents of normal contrast duplicated by a copying machine can also be transmitted.

- Diazo copy (blue print)
- Diazo copy documents of a normal contrast may be transmitted.
- Carbon copy

  A carbon copy may be transmitted if its contrast is normal.

4. Cautions on Transmitting Documents

- Documents written in yellow, greenish yellow, or light blue ink cannot be transmitted.
- Ink, glue, and correcting fluid on documents must be dry before the documents can be transmitted.
- All clips, staples and pins must be removed from documents before transmission.
- Patched (taped) documents should be copied first on a copier and then the copies used for transmission.
- All documents should be fanned before insertion into the feeder to prevent possible double feeds.

5. Automatic Document Feeder Capacity

Number of pages that can be placed into the feeder at anytime is as follows:

Normal size: max. ADF 10 pages

Special size: single sheet only (manual feed)

NOTE: • When you need to send or copy more pages than the feeder limit, place additional pages in feeder when last page in feeder is being scanned.

• Place additional pages carefully and gently in feeder. If force is used, double-feeding or a document jam may result.

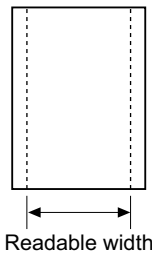
6. Readable Width & Length

The readable width and length of a document are slightly smaller than the actual document size.

Note that characters or graphics outside the effective document scanning range will not be read.

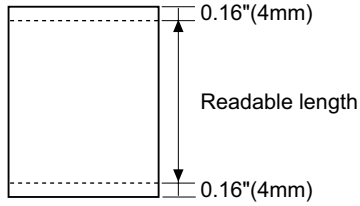
- **Readable width**

  8.3” (210mm), max



- **Readable length**

  This is the length of the document sent minus 0.16” (4mm) from the top and bottom edges.



[4] Installation

1. Site selection

Take the following points into consideration when selecting a site for this model.

ENVIRONMENT

- The machine must be installed on a level surface.
- Keep the machine away from air conditioners, heaters, direct sunlight, and dust.
- Provide easy access to the front, back, and sides of the machine. In particular, keep the area in front of the machine clear, or the original document may jam as it comes out after scanning.
- The temperature should be between 60 - 90°F (15 - 32°C).
- The humidity should be between 25% and 80% (without condensation).

ELECTRICITY

AC 120V, 60Hz, grounded(3-prong) AC outlet is required.

Caution!

- Connection to a power source other than that specified will cause damage to the equipment and is not covered under the warranty.
- If your area experiences a high incidence of lightning or power surges, we recommend that you install a surge protector for the power and telephone lines. Surge protectors can be purchased at most telephone specialty stores.

If the machine is moved from a cold to a warm place...

Condensation may form on the reading glass if machine is moved from a cold to a warm place, this will prevent proper scanning of documents for transmission. Turn on the power and wait approximately 2 hours before using machine.

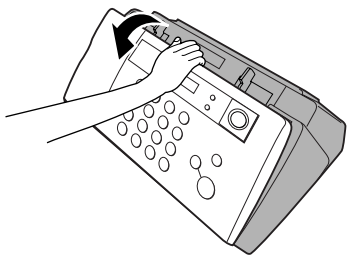
TELEPHONE JACK

A standard RJ-11C single-line wall telephone jack must be located near the machine. This is the telephone jack commonly used in most homes and offices.

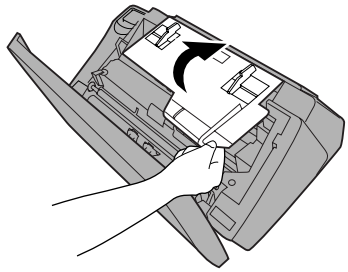
- Plugging the fax machine into a jack which is not RJ-11C single-line wall telephone jack may result in damage to the machine or your telephone system. If you do not know what kind of jack you have, or need to have one installed, contact the telephone company.

2. Removing the packing tape

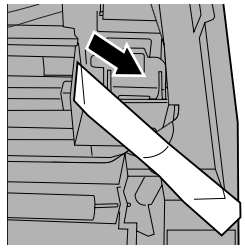
1) Open the operation panel.



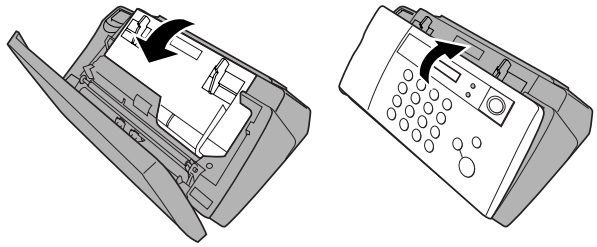
2) Open the print compartment cover.



3) Remove the tape.



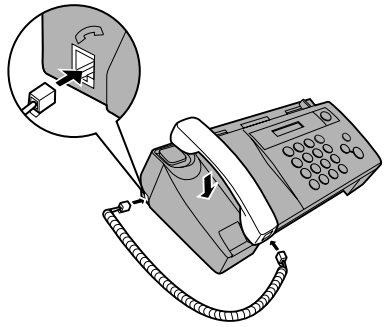
4) Close the print compartment cover and then the operation panel.



3. Connecting the handset

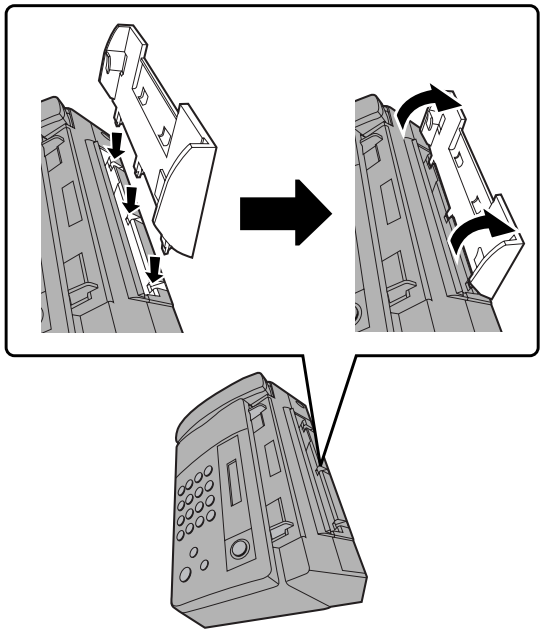
Connect the handset as shown and place it on the handset rest.

- The ends of the handset cord are identical, so they will go into either jack.
- Make sure the handset cord goes into the jack marked with a handset symbol on the side of the machine!
- Use the handset to make ordinary phone calls, or to transmit and receive faxes manually.

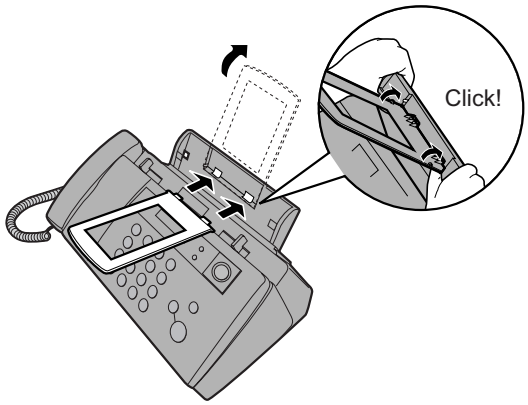


4. Attaching the paper tray

1) Attach the paper tray.



2) Attach the paper tray extension.



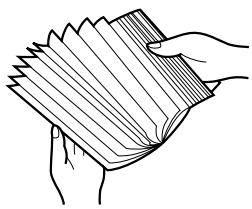
5. Loading printing paper

You can load letter or legal size paper in the paper tray. Recommended paper weight is 20-lb. Copy Bond. The maximum number of sheets is as follows:

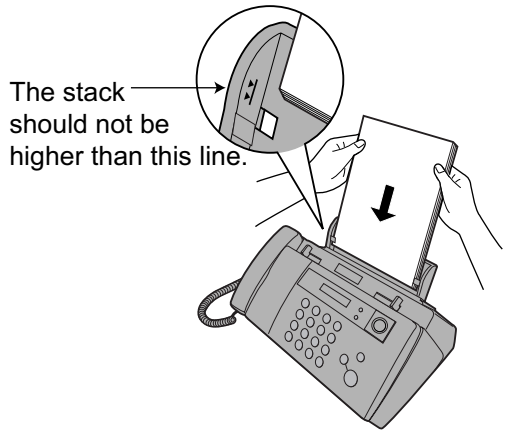
Letter size: Approx. 100 sheets (20-lb. copier paper at room temperature; maximum stack height should not be higher than the line on the tray)

Legal size: 10 sheets (20-lb. copier paper at room temperature)

1) Fan the paper, and then tap the edge against a flat surface to even the stack. Make sure the stack edges are even.



2) Insert the stack of paper into the tray, PRINT SIDE UP.
   - If paper remains in the tray, take it out and combine it into a single stack with the new paper.
   - Be sure to load the paper so that printing takes place on the **print** side of the paper. Printing on the reverse side may result in poor print quality.
   - **GENTLY LOAD PAPER INTO THE PAPER TRAY.**
   - **DO NOT FORCE IT DOWN INTO THE FEED SLOT.**



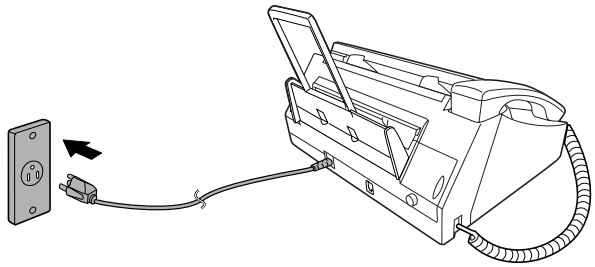
Note: Do not use paper that has already been printed on, or paper that is curled.

6. Connecting the power cord

Plug the power cord into a 120 V, 60 Hz, grounded AC (3-prong) outlet.

Caution!

- Do not plug the power cord into any other kind of outlet. This will damage the machine and is not covered under the warranty.
- **Make sure you have removed all of the packing tape before plugging in the power cord.** Plugging in the power cord without doing so may damage the machine.
- The machine does not have a power on/off switch, so the power is turned on and off by simply plugging in or unplugging the power cord.
- "CHECK CARTRIDGE" normally appears in the display the first time you plug in the machine. This message appears until you install the print cartridge.



Note: If you area experiences a high incidence of lightning or power surges, we recommend that you install surge protectors for the power and telephone lines. Surge protectors can be purchased at most telephone specialty stores.

7. Installing the print cartridge

Follow these steps to install or replace the print cartridge.

- When replacing the print cartridge, be sure to use a **SHARP UX-C70B** cartridge.

> Print cartridge yield (at 4% coverage)
>
> Initial cartridge
> Quality mode OFF: Approx. 300 letter pages
> Quality mode ON: Approx. 200 letter pages
>
> Replacement cartridge (SHARP UX-C70B)
> Quality mode OFF: Approx. 600 letter pages
> Quality mode ON: Approx. 400 letter pages
>
> Quality mode is initially turned on. To turn off Quality mode, see page 1-8.

Caution! Do not open the print compartment cover or insert your hand in the machine while it is printing.

Note: Keep print cartridges sealed in their packages until you are ready to install them. It is recommended that you do not use a cartridge that has been left unused for a long time after opening, as the print quality may be considerably degraded.

- Make sure the machine's power cord is plugged in and paper is laded before installing or replacing the print cartridge.
- If a document is inserted in the feeder, remove the document before installing or replacing the print cartridge.

> If PRINTER ERROR or PRINTER ERROR/CHECK PAPER appears...
> In the event that the display shows either of the above messages, you must clear the error before installing the print cartridge. The error can usually be cleared by pressing (STOP), or if a paper jam has occurred, by removing the paper jam.

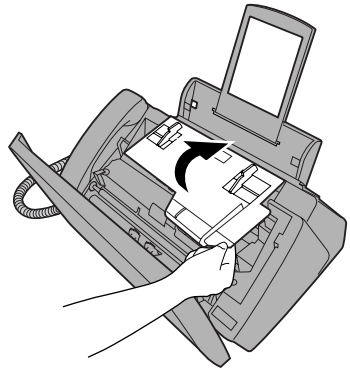
1) Press (INK) .
   - Make sure the handset is on its cradle. If the handset is not on the cradle, pressing (INK) will have no effect.
   - The print cartridge holder moves to the cartridge replacement position.

Display:

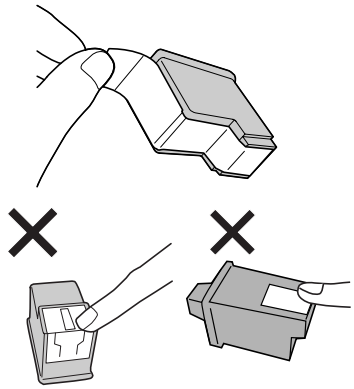
REPLACE INK &
PRESS INK KEY

2) Open the operation panel.

3) Open the print compartment cover.

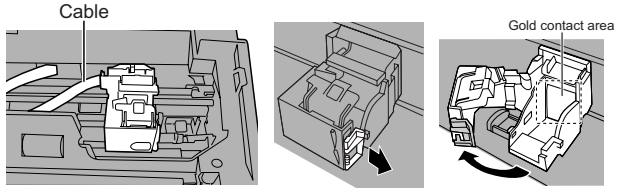


4) Remove only the tape from the new cartridge.
   - **Important:** Make sure you remove all of the tape.
   - **CAUTION! DO NOT** touch the gold contact area on the cartridge.

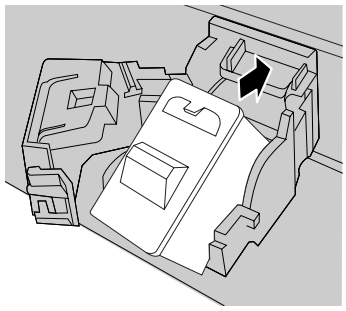


5) Make sure the cartridge holder has moved slightly away from the right side of the compartment, and then pull the green lever and open the cartridge holder cover.
   - If you are replacing the cartridge, remove the old cartridge. If you are going to use the old cartridge again, place it in an air-tight container.
   - **CAUTION! DO NOT** touch the contact area inside the cartridge holder, or pull on the cable that is connected to the cartridge holder.

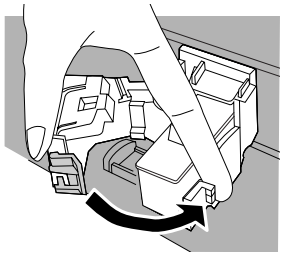
> **Note:** if the print compartment cover is left open for approximately 30 minutes with a cartridge installed, the cartridge will automatically return to its home position. To make the cartridge return to the cartridge replacement position when this has happened, press (INK) .



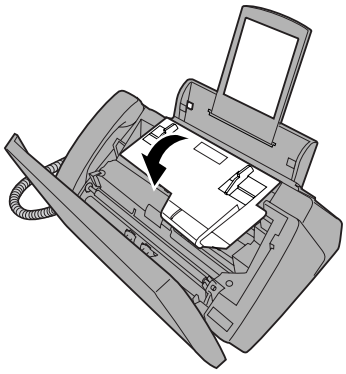
6) Insert the new print cartridge into the cartridge holder.



7) Place your index finger on the tab as shown and close the cartridge holder cover with your thumb. Make sure the cover clicks into place.



8) Close the print compartment cover.



9) Close the operation panel, pressing down firmly to make sure it clicks into place.

Display:

REPLACE INK &
PRESS INK KEY

10)Press INK ◯ to make the print cartridge holder return to its home position.

CHANGE CARTRIDGE
1=NEW, 2=OLD

11)Press 1 (NEW) if the cartridge you installed is new.

Press 2 ABC (OLD) if the cartridge you installed is old.

Display when "NEW" is selected:

NEW CART. OK?
OK: PRESS START

12)Press START/ MEMORY .

If you selected “OLD” in the previous step, this completes the installation procedure. (Note: If you find that print quality is not satisfactory after reinstalling the old cartridge, align the cartridge as explained.)

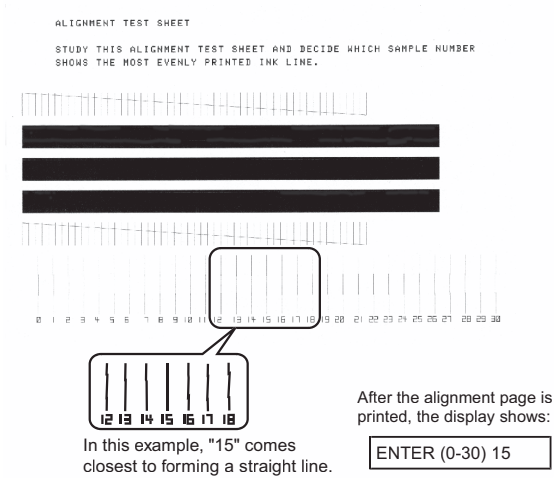
If you selected “NEW”, the display will show the alternating messages at right. Continue with the following steps to align the print cartridge.

Display when "NEW" is selected:

ALIGN CARTRIDGE
1=PRINT,2=SET

13)Press 1 to print an alignment page. (To enter an alignment value without printing an alignment page, press 2 ABC .)

14)In the alignment page that the machine prints, locate the line that comes closest to forming a completely straight line.


ALIGNMENT TEST SHEET
STUDY THIS ALIGNMENT TEST SHEET AND DECIDE WHICH SAMPLE NUMBER SHOWS THE MOST EVENLY PRINTED INK LINE.
12 13 14 15 16 17 18

In this example, "15" comes closest to forming a straight line.

After the alignment page is printed, the display shows:

ENTER (0-30) 15

15)Press the number keys to enter the number of the straightest line.

Example: (1) (5)

- If you make a mistake, press (STOP) and then repeat the entry.

16)Press (START/MEMORY) .

- This completes the alignment procedure.

8. Setting the paper size

The machine has been set at the factory to scale received faxes to letter size paper. If you loaded legal paper, you must change the paper size setting to LEGAL.

1	**Press (F) once and ▽ twice.**	Display: PRINT SET-UP
2	**Press ◁ once and △ once.**	PAPER SIZE SET
3	**Press ◁ once.**	1=LETTER,2=LEGAL
4	**Select the paper size:** **LETTER: (1) LEGAL: (2)**	The display briefly shows your selection, then: COPY CUT-OFF
5	**Press (STOP) to return to the date and time display.**	

Note: If at any time the display shows the alternating messages at right, check the printing paper. If the tray is empty, add paper. If there is paper in the tray, take it out and then reinsert it. When you are finished, press (START/MEMORY).

ADD PAPER &
PRESS START KEY

9. Quality mode (using more/less ink)

If you prefer a higher quality image when printing faxes and copies, turn on Quality mode. If you wish to use less ink or speed up ink drying time, turn off Quality mode.

- Quality mode is initially turned on.

1	**Press (F) once and ▽ twice.**	Display: PRINT SET-UP
2	**Press ◁ once and △ 3 times.**	QUALITY MODE
3	**Press ◁ once.**	1=YES, 2=NO
4	**Press (1) to turn on Quality mode, or (2) to turn it off.**	The display briefly shows your selection, then: HQ FAX PRINT
5	**Press (STOP) to return to the date and time display.**	

10. High-quality fax print setting (fast/slow printing of faxes)

The high-quality fax print setting controls the speed at which faxes are printed. If you prefer a higher quality image at a slower printing speed, turn on this setting. If you prefer a faster printing speed over image quality, turn off the setting.

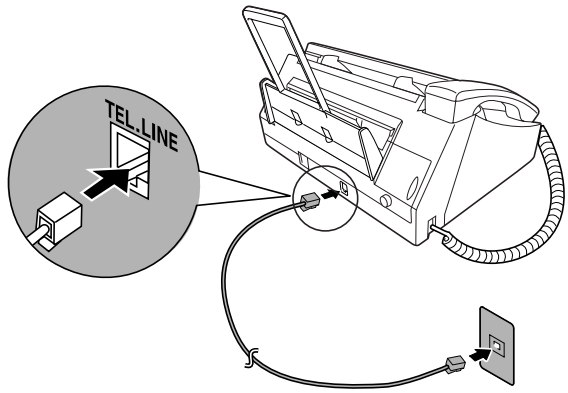
Note: This setting only affects the printing speed. It does not affect the amount of ink used.

- The high-quality fax print setting is initially turned off.

1	**Press (F) once and ▽ twice.**	Display: PRINT SET-UP
2	**Press ◁ once and △ 4 times.**	HQ FAX PRINT
3	**Press ◁ once.**	1=YES, 2=NO
4	**Press (1) to turn on high-quality fax print, or (2) to turn it off.**	The display briefly shows your selection, then: HQ COPY
5	**Press (STOP) to return to the date and time display.**	

11. Connecting the telephone line cord

Insert one end of the line cord into the jack on the back of the machine marked **TEL. LINE**. Insert the other end into a standard (RJ11C) single-line wall telephone jack.



Setting the dial mode

The fax machine is set for tone dialing. If you are on a pulse dial line, you must set the fax machine for pulse dialing. Press the panel keys as follows:

1	**Press (F) once and △ 3 times.**	Display: OPTION SETTING
2	**Press ◁ once and △ 3 times.**	DIAL MODE
3	**Press ◁ once.**	1=TONE, 2=PULSE
4	**Select the dial mode:** **TONE: (1) PULSE: (2)**	The display briefly shows your selection, then: DISTINCTIVE
5	**Press (STOP) to exit.**	

12. Clearing a jammed document

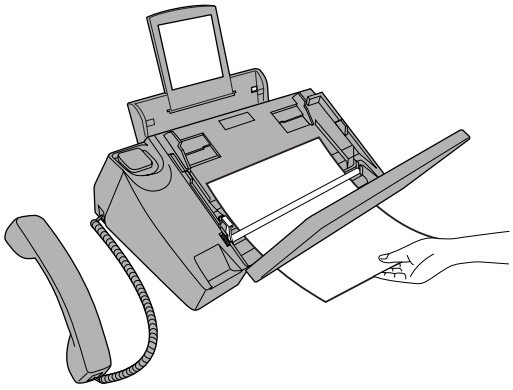
If the original document doesn't feed properly during transmission or copying, or DOCUMENT JAMMED appears in the display, first try pressing the **START/MEMORY** key. If the document doesn't feed out, remove it as explained below.

Important:

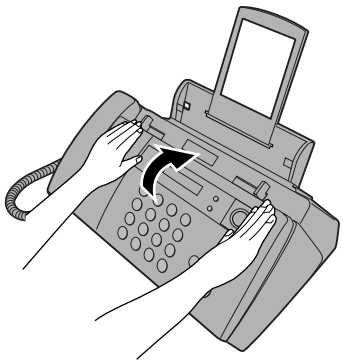
Do not try to remove a jammed document without releasing it as explained below. This may damage the feeder mechanism.

1) Open the operation panel.

2) Gently and remove the document.
   - Be careful not to tear the document.



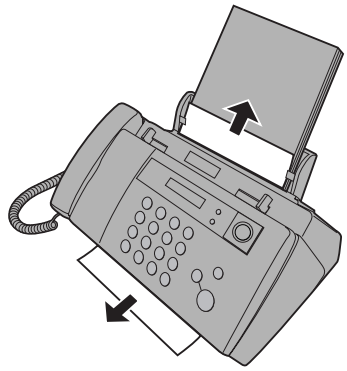
3) Close the operation panel, pressing down firmly to make sure it clicks into place.



13. Clearing jammed printing paper

Gently pull the jammed paper out of the machine, taking care not to tear it. After removing the jammed paper, press STOP to clear the error message (PAPER JAMMED) from the display.

- Normal operation cannot be resumed until you press STOP to clear the error message.



[5] Quick setup guide

IMPORTANT!!

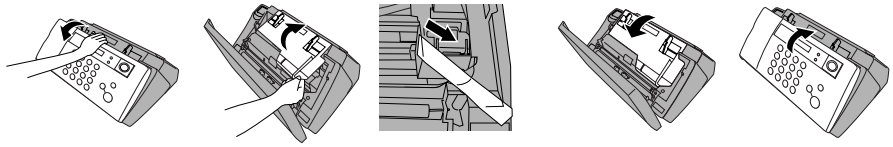
Should you require any assistance setting up or operating your product, please

DO NOT RETURN YOUR PRODUCT TO THE STORE.

After referring to the setup guide and operation manual, if you still require assistance please consult our web page at www.sharpusa.com. From our web page you will be able to directly e-mail our customer support team.
If you would like personal assistance, please call our Customer Assistance Center at 1-877-794-8675.

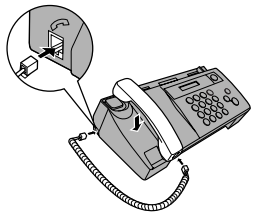
1

1. Open the operation panel.
2. Open the print compartment cover.
3. Remove the packing tape.
4. Close the print compartment cover.
5. Close the operation panel.



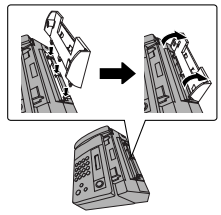
2

Connect the handset.

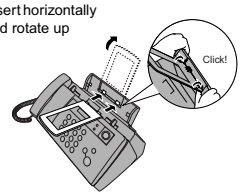


3

1. Attach the paper tray.
2. Attach the paper tray extension.



Insert horizontally and rotate up



If the tabs do not go into the holes, turn the extension over.

4

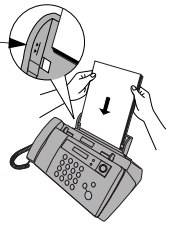
Load paper.

1. Fan the paper.

2. Gently insert paper into the paper tray, ***print side up***.

The stack should not be higher than this line

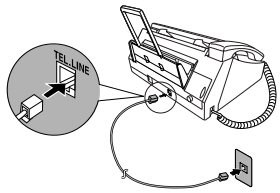
Do not force paper down into the feed slot



Note: If you are loading legal paper, see of the operation manual to change the paper size setting to LEGAL.

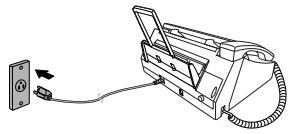
5

Connect the phone line cord to the **TEL. LINE** jack and a wall jack.



6

Plug the power cord into a 120-V grounded outlet.



7

Install the Print Cartridge.

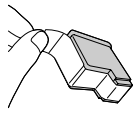
1. Make sure the handset is on its cradle and then press INK.

   The cartridge holder moves to the cartridge replacement position.

2. Open the operation panel.

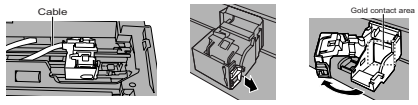
3. Open the print compartment cover.

4. Remove only the tape from the new cartridge.
   IMPORTANT: Make sure you remove all of the tape.

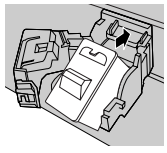


Caution! Do not touch the gold contact area.

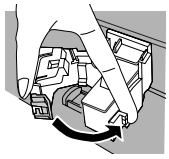
5. Make sure the cartridge holder has moved slightly away from the right side of the compartment, and then pull the green lever and open the cartridge holder cover.
   Do not pull on the cable or touch the gold contact area.



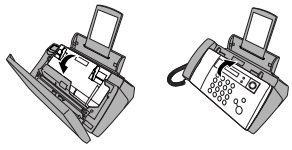
6. Insert the new print cartridge into the cartridge holder.



7. Place your index finger on the tab and close the cartridge holder cover with your thumb.



8. Close the print compartment cover and then the operation panel.



9. Press INK to make the cartridge holder return to its home position.

Display:

CHANGE CARTRIDGE
1=NEW, 2=OLD

10.a. Press 1 to select NEW.

b. Press START/MEMORY →

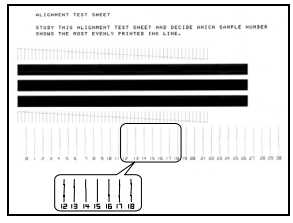
ALIGN CARTRIDGE
1=PRINT,2=SET

c. Press 1 to print an alignment page.

11. In the alignment page that the machine prints, locate the line that comes closest to forming a completely straight line. Enter the number of that line.

Example: 1 5

(If you make a mistake, press STOP and then repeat the entry.)


ALIGNMENT TEST SHEET
STUDY THIS ALIGNMENT TEST SHEET AND DECIDE WHICH SAMPLE NUMBER SHOWS THE MOST EVENLY PRINTED INK LINE.

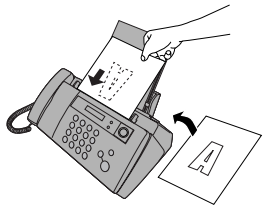
12. Press START/MEMORY.

Note: To enter your name and fax number and set the date and time so that they appear at the top of each fax you send, see page Chapter 1 of your operation manual.

[6] Quick reference guide

1. Sending Faxes

Place your document (up to 10 pages) face down in the document feeder.



1.1. Normal Dialing

1. Lift the handset or press SPEAKER .
2. Dial the fax number.
3. Wait for the reception tone (if a person answers, ask them to press their Start key).
4. Press START/MEMORY .

1.2. Automatic Dialing

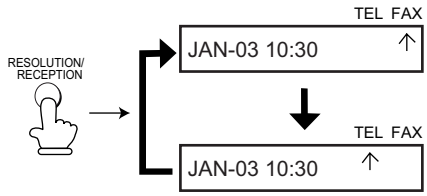
1. Press ◁ or ▷ until the desired destination appears in the display.
2. Press START/MEMORY .

1.3. Direct Keypad Dialing

1. Dial the fax number.
2. Press START/MEMORY .

2. Receiving Faxes

Press the RESOLUTION/RECEPTION until the arrow in the display points to the desired reception mode.



FAX mode: The fax machine automatically answers and receives faxes.

TEL mode: Answer all calls (even faxes) by picking up the handset. To begin fax reception, press START/MEMORY .

3. Storing Auto Dial Numbers

1. Press F once and ◁ twice.
2. Enter the full fax number.
3. Press START/MEMORY .
4. Enter a name by pressing number keys. (To enter two letters in succession that require the same key, press ▷ after entering the first letter.)

SPACE = 1	G = 4 GHI	N = 6 MNO 6 MNO	U = 8 TUV 8 TUV
A = 2 ABC	H = 4 GHI 4 GHI	O = 6 MNO 6 MNO 6 MNO	V = 8 TUV 8 TUV 8 TUV
B = 2 ABC 2 ABC	I = 4 GHI 4 GHI 4 GHI	P = 7 PQRS	W = 9 WXYZ
C = 2 ABC 2 ABC 2 ABC	J = 5 JKL	Q = 7 PQRS 7 PQRS	X = 9 WXYZ 9 WXYZ
D = 3 DEF	K = 5 JKL 5 JKL	R = 7 PQRS 7 PQRS 7 PQRS	Y = 9 WXYZ 9 WXYZ 9 WXYZ
E = 3 DEF 3 DEF	L = 5 JKL 5 JKL 5 JKL	S = 7 PQRS 7 PQRS 7 PQRS 7 PQRS	Z = 9 WXYZ 9 WXYZ 9 WXYZ 9 WXYZ
F = 3 DEF 3 DEF 3 DEF	M = 6 MNO	T = 8 TUV	

5. Press START/MEMORY and then STOP .

CHAPTER 2. ADJUSTMENTS

[1] Adjustments

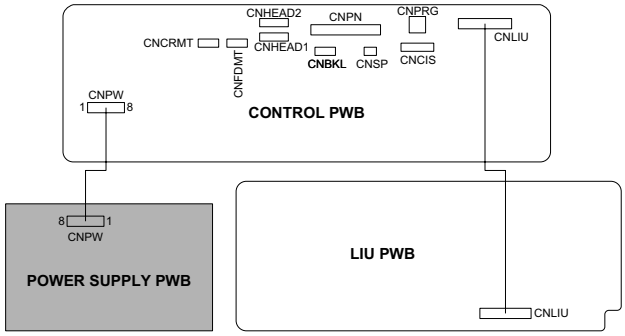
1. General

Since the following adjustments and settings are provided for this model, make adjustments and/or setup as necessary.

2. Adjustments of output voltage (FACTORY ONLY)

1. Install the power supply unit in the machine.
2. Set the recording paper and document.
3. When the document is loaded, power is supplied to the output lines. Confirm that outputs are within the limits below.

2.1. Output voltage settings



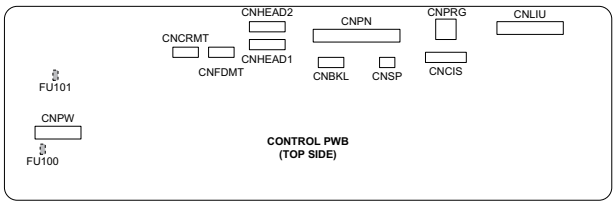
Output	Voltage limits
+5V	4.75V ~ 5.25V
+30V	27.0V ~ 33.0V

Connector No. / Pin No.	CNPW
1	+30V
2	+30V
3	MG
4	MG
5	DG
6	DG
7	+5V
8	+5V

3. IC protectors replacement

ICPs (IC Protectors) are installed to protect the motor driver circuit. ICPs protect various ICs and electronic circuits from an overcurrent condition.

The location of ICPs are shown below:



1) FU100 (KAB5002) is installed in order to protect IC's from an overcurrent generated in the motor drive circuit. If FU100 is open, replace it with a new one.
2) FU101 (KAB3202) is installed in order to protect IC's from an overcurrent generated in the motor drive circuit. If FU101 is open, replace it with a new one.

4. Settings

4.1. Dial mode selector

DIAL mode (Soft Switch No. SW-B4 Data No. 3)

(step 1) Select "OPTION SETTING".

KEY : FUNCTION → ▼▼▼ → ▶

DISPLAY: OPTION SETTING ⇕ | FINE PRIORITY ⇕

(step 2) Select "DIAL MODE".

KEY: Push ▼ until DIAL MODE ⇕ is → ▶ indicated because the number of ▼ 's changes by the model.

DISPLAY: DIAL MODE ⇕ | 1=TONE, 2=PULSE

(step 3) Select, using "1" or "2".

KEY: 1

DISPLAY: TONE SELECTED

KEY: 2

DISPLAY: PULSE SELECTED

(step 4) End, using the "STOP" key.

KEY: STOP

5. Volume adjustments

You can adjust the volume of the speaker, handset, and ringer using the UP and DOWN arrow keys.

5.1. Speaker

1 Press SPEAKER.

2 Press ▽ or △ to select the desired volume level.

- Press SPEAKER again to turn off the speaker.

Display:
SPEAKER: HIGH ⇕ SPEAKER: MIDDLE ⇕ SPEAKER: LOW

5.2. Handset

1 Press ▽ or △ to select the desired volume level.
(Make sure SPEAKER has not been pressed, the handset is not lifted, and a document is not loaded in the feeder.)

- The ringer will ring once at the selected level.

Display:
RINGER: HIGH ⇕ RINGER: MIDDLE ⇕ RINGER: LOW ⇕ RINGER: OFF OK ?

2 If you selected RINGER: OFF OK ? to turn off the ringer , press START/MEMORY.

5.3. Ringer

1 When talking thr ough the handset, press ▽ or △ to select the desired volume level.

- Note: The volume reverts to MIDDLE each time you replace the handset.

Display:
RECEIVER: HIGH ⇕ RECEIVER: MIDDLE ⇕ RECEIVER: LOW

[2] Diagnostics and service soft switch

1. Entering the diagnostic mode

Press [FUNC] → [9] → [✳] → [8] → [#] → [7], and the following display will appear.

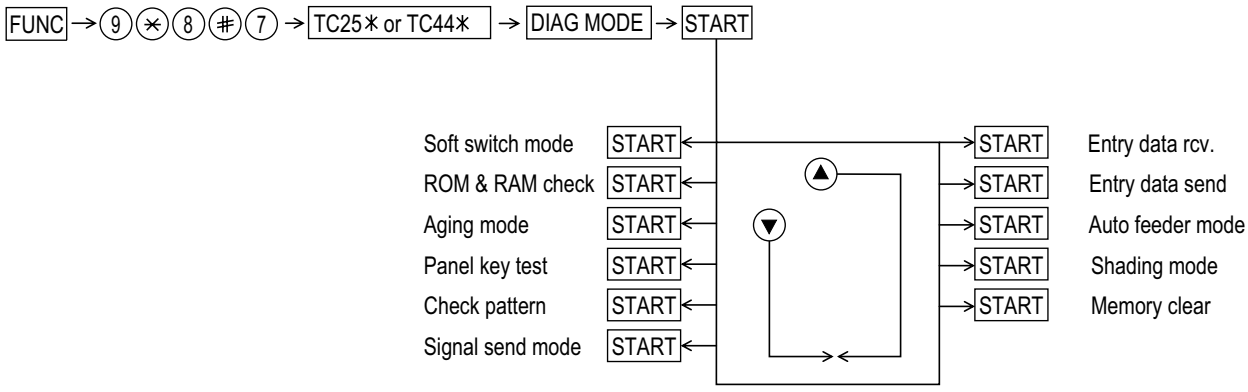
[ROM Ver. TC25✳ or TC44✳] After 2 sec: [DIAG MODE]

TC25 ✳ (UX-B20U)

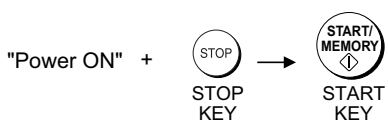
TC44 ✳ (UX-B20C/UX-B25C)

Then press the [START] key. Select the desired item with the UP key or the DOWN key or select with the rapid key. Enter the mode with the START key.

(Diag· specifications)


FUNC → 9 ✳ 8 # 7 → TC25✳ or TC44✳ → DIAG MODE → START
Soft switch mode START
ROM & RAM check START
Aging mode START
Panel key test START
Check pattern START
Signal send mode START
START Entry data rcv.
START Entry data send
START Auto feeder mode
START Shading mode
START Memory clear

If the diag mode cannot be set, repeat the diag mode operation, performing the following operation.
After the power is turned on and "WAIT A MOMENT" is indicated, press the STOP key.



In relation with the process response (request from Production Engineering) "WAIT A MOMENT" clock indication may appear depending on STOP key timing. If the STOP key is held down, "MEMORY CLEAR?" appears.

2. Diagnostic items

ITEM No.	Contents	Function
1	SOFT SWITCH MODE	Soft switches are displayed and changed. List can be output.
2	ROM & RAM CHECK	ROM sum-check and RAM is matched. Result list is output.
3	AGING MODE	10 sheets of check patterns are output every 5 minutes per sheet.
4	PANEL KEY TEST	Panel keys are tested. Result list is output.
5	CHECK PATTERN	Check pattern is output.
6	SIGNAL SEND MODE	Various signals of FAX communication are output.
7	MEMORY CLEAR	Back-up memory is cleared, and is set at delivery.
8	SHADING MODE	Shading compensation is performed in this mode.
9	AUTO FEEDER MODE	Insertion and discharge of document are tested.
10	ENTRY DATA SEND	Registered content is sent.
11	ENTRY DATA RECEIVE	Registered content is received, and its list is output.

3. Diagnostic items description

3.1. Soft switch mode

Used to change the soft switch settings.
The soft switch which is stored internally is set by using the keys.
The available soft switches are SW-A1 to SW-P7.
The content of soft switches is shown in Soft switch description.
The contents are set to factory default settings.

3.2. ROM & RAM check

ROM executes the sum check, and RAM executes the matching test.

The result will be notified with the number of short sounds of the buzzer as well as by printing the ROM & RAM check list.

Number of short sounds of buzzer 0 → No error
1 → FAX engine ROM error
2 → RAM error

(4Kbytes SRAM or 512Kbytes DRAM)

3.3. Aging mode

The check pattern will be printed sheet by sheet. This operation will be executed at a rate of one sheet per 5 minutes, and will be ended at a total of 10 sheets.

3.4. Panel key test

This mode is used to check whether each key operates properly. Press the key on the operation panel, and the key will be displayed on the LCD. Therefore, press all keys. At this time, finally press the STOP key. When the STOP key is pressed, the keys that are not judged as "pressed" will be printed on the result list.

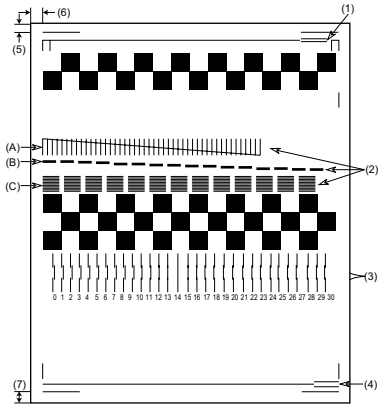
- LED part of the contact image sensor (CIS) is kept on during the term from when "START" of the panel test mode to end with the STOP key.

3.5. Check pattern

Check patterns are printed on one sheet. Printing performance:The following 4 items are checked.

- Print area:Checks that the print area is reserved.
- Nozzles:When checking the nozzle, make sure at least 1 line is printed in each block: all the blocks of horizontal black bars and the black line patterns in (B) and (C) ((B):16 patterns, (C):13 patterns). (Note: If the nozzle (A) is not spraying properly, checking the area (B) and (C) may be difficult (or may not be printed at all). In this case, print again.
- Vertical align:Checks that the straight vertical line is drawn instead of crooked line.
- Skew:Checks the skew of the recording paper.

Detailed of check patterns
(1)Top skew (2)Nozzle test (3)Vertical lines (4)Bottom skew
(5)Top margin (6)Left margin (7)Bottom margin



3.6. Signal send mode

This mode is used to send various signals to the circuit during FAX communication. Every push of START key sends a signal in the following sequence. Moreover, the signal sound is also output to the speaker when the line monitor of the soft switch is on.

[1] No signals
[2] 9600BPS (V.29)
[3] 7200BPS (V.29)
[4] 4800BPS (V.27ter)
[5] 2400BPS (V.27ter)
[6] 300BPS (FLAG)
[7] 2100Hz (CED)
[8] 1100Hz (CNG)

3.7. Memory clear

This mode is used to clear the backup memory and reset to the default settings.

3.8. Shading mode

The mode is used for the shading compensation. For reading, set up the special original paper. (Refer to page 8-3)
The compensation memorizes the reference data of white and black for reading.
Moreover, the memorized data is not erased even if memory clear mode is executed.

3.9. Auto feeder mode

In this mode, a document is inserted and discharged to check the auto feed function.

After this mode is started, set a document, and the document feed will be automatically tested.

3.10. Entry data send

This mode is used to send the registered data to another machine and make the other machine copy the registered content.

Before sending in this mode, it is necessary to set the other machine at the entry data receive mode.

The following, information will be sent to the remote machine:

1. Telephone list data
2. Sender register data
3. Optional setting content
4. Soft switch content
5. Junk fax number
6. Recording setting list data

3.11. Entry data receive

In this mode, the registered data sent from the other machine is received and the received data is registered in the machine. When this mode is used for receiving, the other machine must be in the entry data send mode.

After receiving is completed, the following lists are printed.

1. Telephone list data
2. Sender register list (*)
3. Optional setting list (*)
4. Soft switch content
5. Junk fax number list (*)
6. Recording setting list data (*)

(*): Refer to SETUP LIST

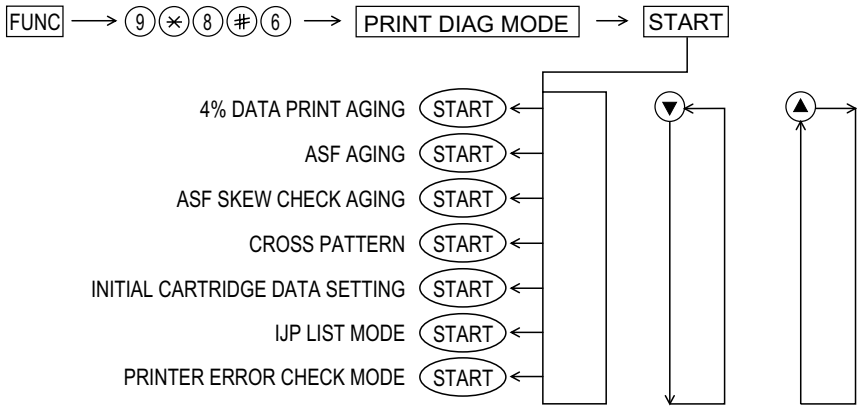
4. Entering the printer diagnostic mode

Press [FUNC] → [9] → [×] → [8] → [#] → [6] , and the following display will appear.

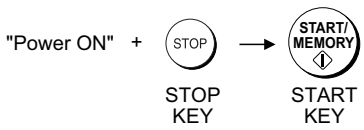
[PRINT DIAG MODE]

Then press the [START] key. Select the desired item with the up key or the down key or select with the rapid key. Enter the mode with the START key.

(Diag· specifications)



If the diagnostic mode cannot be set, repeat the diagnostic mode operation, performing the following operation.
After the power is turned on and "WAIT A MOMENT" is indicated, press the STOP key.



In relation with the process response (request from Production Engineering) "WAIT A MOMENT" clock indication may appear depending on STOP key timing. If the STOP key is held down, "MEMORY CLEAR?" appears.

5. Printer diagnostic items

Item No.	Contents	Function
1	4% DATA PRINT AGING	4% of printing data continue to be printed.
2	ASF AGING	The feed of the paper is continued.
3	ASF SKEW CHECK AGING	The frame pattern continues to be printed to check the inclination performance.
4	CROSS PATTERN	The image data of the cross pattern to be printed.
5	INITIAL CARTRIDGE DATA SETTING	It makes the dot counter the setting for the initial cartridge.
6	IJP LIST MODE	The maintenance data is printed.
7	PRINTER ERROR CHECK MODE	The cause of “PRINTER ERROR” message is displayed.

6. Printer diagnostic items description

6.1. 4% data print aging

This mode is the aging mode that prints the text pattern of 4%

6.2. ASF aging (all white)

This mode is the aging mode that tests the performance of the ASF function.

6.3. ASF skew check aging

This mode is the aging mode that tests the performance of the ASF function.

Detailed of check patterns

1. Top skew
2. Bottom skew
3. Top margin
4. Bottom margin

6.4. Cross pattern

This mode prints the test pattern that tests the performance of the printer.

6.5. Initial cartridge data setting

This mode makes the dot counter the setting for initial cartridge, and this mode resets the following counter.

1. Replacement counter of the cartridge
2. Paper jam counter

6.6. IJP list mode

Maintenance data of the printer is output.

[Details of maintenance data]

Item	Clear timing	Update timing
Dot counter	At the replacement cartridge	After printing
Page counter	At the replacement cartridge	After printing
Number of head cleaning (Wiping of cartridge)	At the initial cartridge setting	At the maintenance
Replacement counter of the cartridge	At the initial cartridge setting	At the replacement of cartridge
Jam counter	At the initial cartridge setting	At every paper jam

6.7. Printer error check mode

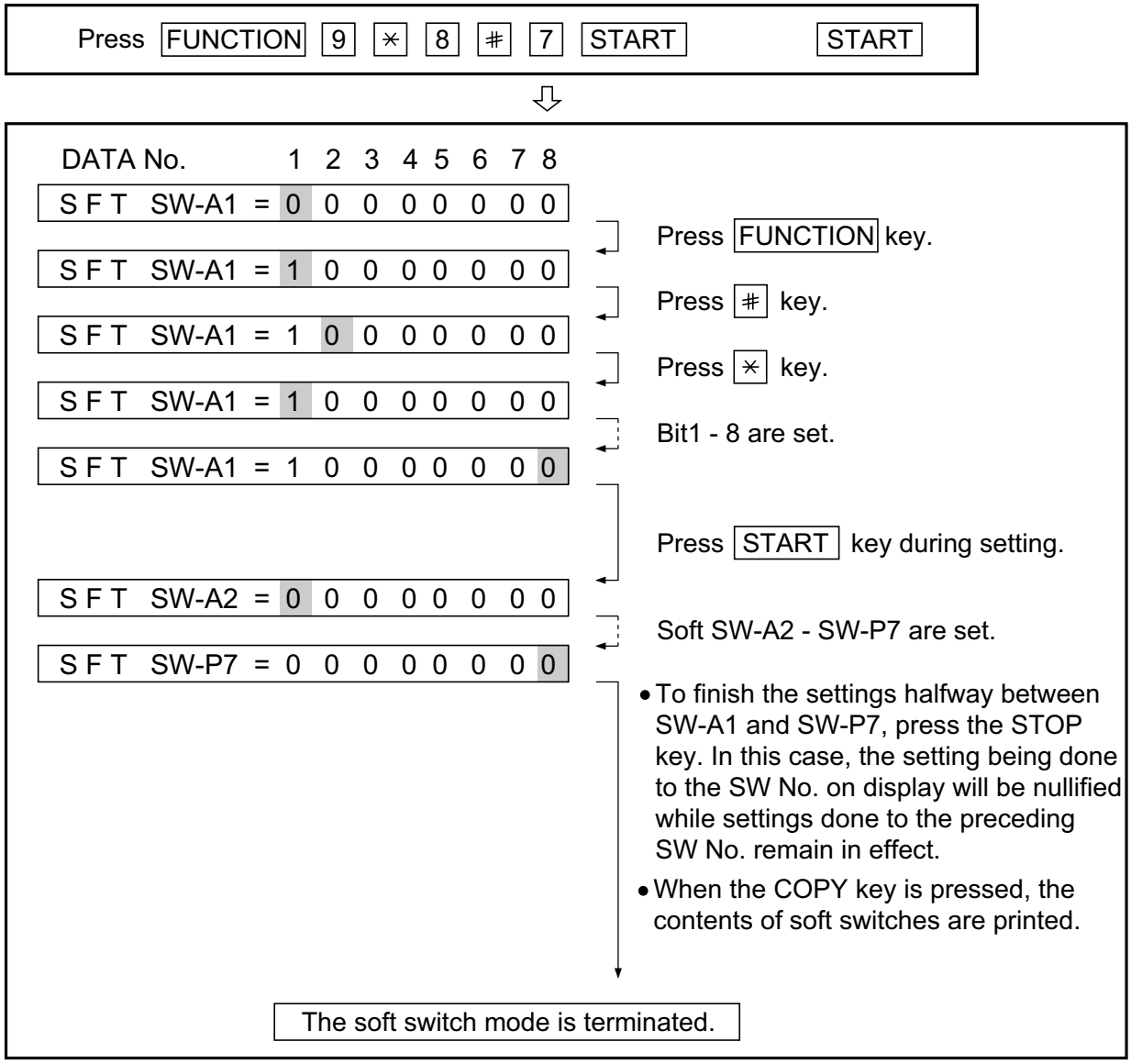
The cause of “PRINTER ERROR” message is displayed.

[Details of Display]

Display	Cause of “PRINTER ERROR” message
PRINTER ERR 01	Power on reset response was not received from printer.
PRINTER ERR 02	Print data transfer from Printer interface ASIC to printer was not completed for 180 sec.
PRINTER ERR 03	Cap position check of the carrier is failed.
PRINTER ERR 04	Printing 1 page is not finished during 5 min.
PRINTER ERR 05	Carrier moving from cartridge change position to cap position is failed.
PRINTER ERR 06	Carrier moving to cartridge change position is failed.
PRINTER ERR 07	Cartridge replacement is failed.
PRINTER ERR 08	Cartridge ID check is failed.
PRINTER ERR 09	Carrier was not reached to cap position for 60 sec after last printed page was exited.
PRINTER ERR 10	Paper pick up is failed.
PRINTER ERR 20	Carrier stall error.
PRINTER ERR 21	Carrier stall error.
PRINTER ERR 22	Carrier stall error.
PRINTER ERR 23	Carrier stall error.
PRINTER ERR 24	Printer head short error.
PRINTER ERR 25	Printer head heater control is failed.
PRINTER ERR 26	Print start position setting is abnormal.

7. How to make soft switch setting

To enter the soft switch mode, press the following key entries in sequence.


Press FUNCTION 9 ✳ 8 # 7 START START
DATA No. 1 2 3 4 5 6 7 8
S F T SW-A1 = 0 0 0 0 0 0 0 0
S F T SW-A1 = 1 0 0 0 0 0 0 0
S F T SW-A1 = 1 0 0 0 0 0 0 0
S F T SW-A1 = 1 0 0 0 0 0 0 0
S F T SW-A1 = 1 0 0 0 0 0 0 0
S F T SW-A2 = 0 0 0 0 0 0 0 0
S F T SW-P7 = 0 0 0 0 0 0 0 0
Press FUNCTION key.
Press # key.
Press ✳ key.
Bit1 - 8 are set.
Press START key during setting.
Soft SW-A2 - SW-P7 are set.
• To finish the settings halfway between SW-A1 and SW-P7, press the STOP key. In this case, the setting being done to the SW No. on display will be nullified while settings done to the preceding SW No. remain in effect.
• When the COPY key is pressed, the contents of soft switches are printed.
The soft switch mode is terminated.

8. Soft switch description

8.1. Soft switch

SW NO.	DATA NO.	ITEM	Switch setting and function		Initial setting		Remarks
			1	0	U/C		
SW I A1	1	Protect from echo	No	Yes	0		
	2	Forced 4800 BPS reception	Yes	No	0		
	3	Footer print	Yes	No	0		
	4	Length limitation of copy/send/ receive	No limit	Copy/send: 60 cm Receive: 1 m	0		
	5	CSI transmission	No transmitted	Transmitted	0		
	6	DIS receive acknowledgement during G3	Twice	NSF: Once DIS: Twice	0		
	7	Non-modulated carrier for V29 transmission modem	Yes	No	0		
	8	EOL detect timer	25sec	13sec	0		
SW I A2	1 2 3 4	Modem speed	No. 1 / No.2 / No. 3 / No. 4 V.29 9600bps: 0 / 0 / 0 / 1 V.29 7200bps: 0 / 0 / 1 / 1 V.27ter 4800bps: 0 / 0 / 1 / 0 V.27ter 2400bps: 0 / 0 / 0 / 0		0 0 0 1		
	5	Sender's information transmit	No	Yes	0		
	6	H2 mode	No	Yes	0		
	7	Communication error treatment in RTN sending mode (reception)	No communication error	Communication error	0		
	8	CNG transmission	No	Yes	0		
SW I A3	1 2	CED tone signal interval	1000ms / 750ms / 500ms / 75ms No. 1: 1 / 1 / 0 / 0 No. 2: 1 / 0 / 1 / 0		0 0		
	3	MR coding	No	Yes	0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I A4	1 2 3 4 5	Signal transmission level	Binary input No. = 16 8 4 2 1 1 2 3 4 5 EX 0 0 1 1 1 eg. Signal transmission level is set to -7dBm.		0 0 1 1 1		
	6	Protocol monitor (Error print)	Printed at communication error	Not printed	0		
	7	Protocol monitor	Yes	No	0		
	8	Line monitor	Yes	No	0		
SW I A5	1 2	Digital line equalization setting (Reception)	7.2km / 0km No. 1: 1 / 0 No. 2: 1 / 0		1 1		
	3 4	Digital line equalization setting (Transmission)	7.2km / 0km No. 3: 1 / 0 No. 4: 1 / 0		0 0		
	5 6	Digital cable equalizer setting (Reception for Caller ID)	7.2km / 0km No. 5: 1 / 0 No. 6: 1 / 0		0 0		
	7	Error criterion	10 ~ 20%	5 ~ 10 %	0		
	8	Anti junk fax check	Yes	No	1		

SW NO.	DATA NO.	ITEM	Switch setting and function						Initial setting		Remarks
			1			0			U/C		
SW I A6	1	Reserved							0		
	2	Reserved							0		
	3	Disconnect the line when DIS is received in RX mode	No			Yes			1		
	4	Equalizer freeze control (MODEM)	On			Off			0		
	5	Equalizer freeze control 7200 BPS only	No			Yes			0		
	6	CNG transmission in manual TX mode	Yes			No			1		
	7	Initial compression scheme for sharp fax in TX mode	MR mode			H2 mode			0		
	8	Modem speed automatic fallback when RX level is under -40dBm	Yes			No			0		
SW I B1	1 2 3 4	Recall interval	Binary input No. = 8 4 2 1 1 2 3 4 EX 0 1 0 1 eg. Recall interval is set to 5 min.						0 1 0 1		
	5 6 7 8	Recall times	Binary input No. = 8 4 2 1 5 6 7 8 EX 0 0 1 1 eg. Recall time is set to 3 times.						0 0 1 1		
SW I B2	1	Dial pausing (sec/pause)	4 sec			2 sec			0		
	2	Dial tone detection (before auto dial)	No			Yes			1		
	3	Reserved							0		
	4	Busy tone detection (after auto dial)	No			Yes			0		
	5 6	Waiting time after dialing		45 sec	55 sec	90 sec	140 sec				
			No. 5	0	0	1	1		0		
			No. 6	0	1	0	1		0		
	7	Reserved							0		
	8	Reserved							0		
SW I B3	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	Reserved							0		
	5	Reserved							0		
	6 7	Auto dial mode delay timer of before line connect		0 sec	1.5 sec	3.0 sec	4.5 sec				
			No. 6	0	0	1	1		0		
			No. 7	0	1	0	1		0		
	8	Hold key	Enable			Disable			1		
SW I B4	1 2	Auto dial mode delay timer of after line connect		1.7 sec	3.0 sec	3.6 sec	4.0 sec				
			No. 1	0	0	1	1		0		
			No. 2	0	1	0	1		0		
	3	Dial mode	Tone			Pulse			1		OPTION
	4	Pulse → Tone change function by ✳ key	Enable			Disable			1		
	5	Dial pulse make/break ratio (%)	40/60			33/67			1		
	6	Reserved							0		
	7	Reserved							0		
	8	Recalling fixed only one time when dialing was unsuccessful without detecting busy tone signal	Yes			No			1		

SW NO.	DATA NO.	ITEM	Switch setting and function						Initial setting		Remarks
			1			0			U/C		
SW I B5	1 2 3 4 5	DTMF signal transmission level (Low)	Binary input No. = 16 8 4 2 1 1 2 3 4 5 (n x 0.5dBm) EX 0 0 1 1 0 eg. Signal transmission level is set to -3dBm.						0 0 1 1 0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I B6	1 2 3 4 5	DTMF signal transmission level (High)	Binary input No. = 16 8 4 2 1 1 2 3 4 5 (n x 0.5dBm) EX 0 0 0 1 1 eg. Signal transmission level is set to -1.5dBm.						0 0 0 1 1		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I C1		Reading slice (Binary)		Factory setting	Light	Dark	Darker in dark				
	1		No. 1	0	1	0	1		0		
	2		No. 2	0	0	1	1		0		
		Reading slice (Half tone)		Factory setting	Light	Dark	Darker in dark				
	3		No. 3	0	1	0	1		0		
	4		No. 4	0	0	1	1		0		
	5	Line density selection	Fine			Standard			0		OPTION
	6	Reserved							0		
	7	MTF correction in half tone mode	No			Yes			0		
	8	Reserved							0		
SW I D1	1 2 3 4	Number of rings for auto receive	Binary input No. = 8 4 2 1 1 2 3 4 EX 0 1 0 0 eg. Number of rings for auto receive is set to 4times.						0 1 0 0		OPTION
	5	Automatic switching manual to auto receive mode	Reception after 5 rings			No reception			0		
	6	Reserved							0		
		CI detect frequency		As PTT	11.5Hz	13.0Hz	20.0Hz				
	7		No. 7	0	0	1	1		0		
	8		No. 8	0	1	0	1		0		
SW I D2	1 2 3	Distinctive ringing setting (PATTERN 4 and 5 are for CANADA only)			No. 1	No. 2	No. 3		0 0 0		OPTION
			OFF		0	0	0				
			STANDARD		0	0	1				
			PATTERN1		0	1	0				
			PATTERN2		0	1	1				
			PATTERN3		1	0	0				
			PATTERN4		1	0	1				
			PATTERN5		1	1	0				
	4	Reserved							0		
	5	Caller ID function	Yes			No			0		OPTION
	6	Caller ID detect during CI off	All times			Only first			0		
	7	Reserved							0		
	8	Reserved							0		

SW NO.	DATA NO.	ITEM	Switch setting and function						Initial setting		Remarks
			1			0			U/C		
SW I D3	1 2 3 4 5	CI off detection timer (0-1550ms setting by 50ms step)	Binary input No. = 16 8 4 2 1 1 2 3 4 5 (n x 50ms) EX 0 1 1 1 0 eg. CI signal OFF detect time is set to 700ms.						0 1 1 1 0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I E1	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	Reserved							0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I E2	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	Reserved							0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I E3	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	Reserved							0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I F1	1 2	DTMF detection time		50ms	80ms	100ms	120ms		0 0		
			No. 1	0	0	1	1				
			No. 2	0	1	0	1				
	3	Protection of remote reception (5 ✳✳) detect	Yes			No			1		
	4	Remote reception with GE telephone	Compatible			Not compatible			1		
	5 6 7 8	Remote operation code figure by external TEL (0~9)	Binary input No. = 8 4 2 1 5 6 7 8 EX 0 1 0 1 eg. Remote operation code is set to 5✳✳.						0 1 0 1		

SW NO.	DATA NO.	ITEM	Switch setting and function						Initial setting		Remarks
			1			0			U/C		
SW I F2	1	CNG detection in STAND-BY mode	Yes			No			1		OPTION
	2	Reserved							0		
	3	Reserved							0		
	4	Number of CNG detect (STAND-BY mode)		1pulse	2pulses	3pulses	4pulses		0		
	5		No. 4	0	0	1	1		1		
			No. 5	0	1	0	1				
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I G1	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	Reserved							0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I G2	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	Reserved							0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I G3	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	Reserved							0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I H1	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	Reserved							0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I H2	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	Reserved							0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I I1	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	Reserved							0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		

SW NO.	DATA NO.	ITEM	Switch setting and function		Initial setting		Remarks
			1	0	U/C		
SW I I2	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I I3	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I I4	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I I5	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I I6	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I I7	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		

SW NO.	DATA NO.	ITEM	Switch setting and function						Initial setting		Remarks
			1			0			U/C		
SW I J1	1	Reserved							0		
	2	Reserved							0		
	3	Sender's phone number setting	Cannot change			Change allowed			0		
	4	Reserved							0		
	5	Reserved							0		
	6	Summer time setting	No			Yes			1		OPTION
		Ringer volume		Off	Low	Middle	High				OPTION
	7		No. 7	0	0	1	1		1		
	8		No. 8	0	1	0	1		0		
SW I J2		Speaker volume (3 stages)		Low	Low	Middle	High				OPTION
	1		No. 1	0	0	1	1		1		
	2		No. 2	0	1	0	1		0		
	3	Reserved							0		
		Handset receiver volume		Low	Low	Middle	High				OPTION
	4		No. 4	0	0	1	1		1		
	5		No. 5	0	1	0	1		0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I J3	1	Reserved							0		
		Communication results printout (Transaction report)		E/T/M	Send only	Always	No print	Err only			OPTION
	2		No. 2	0	0	0	0	1	1		
	3		No. 3	0	0	1	1	0	0		
	4		No. 4	0	1	0	1	0	0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I K1	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	Reserved							0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I L1	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	Reserved							0		
	5	Cut off mode (COPY mode)	Yes			No			1		OPTION
	6	A4 paper enable	Enable			Disable			0		
	7	LEGAL & LETTER paper enable	Enable			Disable			1		
	8	Reserved							0		
SW I L2		Paper set size			LETTER	LEGAL	A4				OPTION
	1		No. 1		0	0	1		0		
	2		No. 2		0	1	0		0		
	3	Automatic reduce of receive	Auto			100 %			1		OPTION
	4	Reserved							0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		

SW NO.	DATA NO.	ITEM	Switch setting and function		Initial setting		Remarks
			1	0	U/C		
SW I M1	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I M2	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I N1	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I N2	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I N3	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I O1	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I O2	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		

SW NO.	DATA NO.	ITEM	Switch setting and function		Initial setting		Remarks
			1	0	U/C		
SW I O3	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I O4	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I O5	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I O6	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I P1	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		
SW I P2	1	Reserved			0		
	2	Reserved			1		
	3	Reserved			1		
	4	Reserved			0		
	5	Reserved			1		
	6	Reserved			1		
	7	Reserved			1		
	8	Reserved			1		
SW I P3	1	Reserved			0		
	2	Reserved			0		
	3	Reserved			0		
	4	Reserved			0		
	5	Reserved			0		
	6	Reserved			0		
	7	Reserved			0		
	8	Reserved			0		

SW NO.	DATA NO.	ITEM	Switch setting and function						Initial setting		Remarks
			1		0				U/C		
SW I P4	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	Reserved							0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I P5	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	Reserved							0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I P6	1	Ink save mode	Yes		No				0		OPTION
	2	Half tone copy ink save mode printing fixed	Yes		No				1		
	3	Reserved							0		
	4	Reserved							0		
	5	Reserved							0		
	6	Reserved							0		
	7	Reserved							0		
	8	Reserved							0		
SW I P7	1	Reserved							0		
	2	Reserved							0		
	3	Reserved							0		
	4	End buzzer		3sec	1sec	No beep			0		
	5		No. 4	0	0	1			0		
			No. 5	0	1	0			0		
	6	Key error/Communication error beep	No beep		Beep				0		OPTION
	7	End beep (3sec)	No beep		Beep				0		OPTION
	8	Key touch tone	No beep		Beep				0		OPTION

8.2. Soft switch function description

SW-A1 No. 1 Protect from echo

Used to protect from echo in reception.

SW-A1 No. 2 Forced 4800BPS reception

When line conditions warrant that receptions take place at 4800 BPS repeatedly.

It may improve the success of receptions by setting at 4800BPS.

This improves the receiving document quality and reduces handshake time due to fallback during training.

SW-A1 No. 3 Footer print

When set to "1", the date of reception, the sender machine No., and the page No. are automatically recorded at the end of reception.

SW-A1 No. 4 Length limitation of copy/send/receive

Used to set the maximum page length.

To avoid possible paper jam, the page length is normally limited to 0.6 meter for copy or transmit, and 1 meters for receive.

It is possible to set it to "No limit" to transmit a long document, such as a computer print form, etc. (In this case, the receiver must also be set to no limit.)

SW-A1 No. 5 CSI transmission

(CSI TRANSMISSION) is a switch to set whether the machine sends or does not send the signal (CSI signal) informing its own telephone No. to the remote fax machine when information is received. When "nonsending" is set, the telephone No. is not output on the remote transmitting machine if the remote transmitting machine has the function to display or print the telephone No. of receiving machine, using this CSI signal.

SW-A1 No. 6 DIS receive acknowledgment during G3 transmission

Used to make a choice of whether reception of DIS (NSF) is acknowledged after receiving two DISs (NSFs) or receiving one DIS (two NSFs).

It may be useful for overseas communication to avoid an echo suppression problem, if set to 1.

SW-A1 No. 7 Non-modulated carrier for V.29 transmission modem

Though transmission of a non-modulated carrier is not required for transmission by the V.29 modem according to the CCITT recommendation, it may be permitted to a send non-modulated carrier before the image signal to avoid an echo suppression problem. It may be useful for overseas communication to avoid an echo suppression problem, if set to 1.

SW-A1 No. 8 EOL (End Of Line) detect timer

Used to make a choice of whether to use the 25-second or 13-second timer for detection of EOL.

This is effective to override communication failures with some facsimile models that have longer EOL detection.

SW-A2 No. 1 ~ No. 4 Modem speed

Used to set the initial modem speed. The default is 9600BPS.

It may be necessary to program it to a slower speed when frequent line fallback is encountered, in order to save the time required for fallback procedure.

SW-A2 No. 5 Sender's information transmit

(SENDER'S INFORMATION TRANSMISSION) is a switch to set the function to print the content of HEADER PRINT described in the passcode list at the front end of receiver's original when original is sent to the remote machine.

If this switch is set to "NO", the HEADER PRINT is not output at the receiving machine.

SW-A2 No. 6 H2 mode

Used to determine reception of H2 mode (15 sec transmission mode). When set to OFF, H2 mode reception is inhibited even though the transmitting machine has H2 mode function.

SW-A2 No. 7 Communication error treatment in RTN sending mode (Reception)

Used to determine communication error treatment when RTN is sent by occurrence of a received image error in G3 reception. When it is set to "1", communication error is judged as no error.

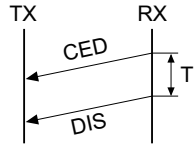
SW-A2 No. 8 CNG transmission

When set to "0" , this model allows CNG transmission by pressing the Start key in the key pad dialing mode. When set to "1", CNG transmission in the key pad dialing mode cannot be performed. In either case. CNG transmission can be performed in the auto dial mode.

SW-A3 No. 1, No. 2 CED tone signal interval

For international communication, the 2100Hz CED tone may act as an echo suppression switch, causing a communication problem.

Though SW-A3 No. 1 and No. 2 are normally set to 0, this setting is used to change the time between the CED tone signal to eliminate the communication caused by echo.



SW-A3 No. 3 MR Coding

MR Coding is enable.

SW-A3 No. 4 ~ No. 8 Reserved

Set to "0".

SW-A4 No. 1 ~ No. 5 Signal transmission level

Used to control the signal transmission level in the range of-0dB to-31dB.

SW-A4 No. 6 Protocol monitor (Error print)

If set to "1", protocol is printed at communication error.

SW-A4 No. 7 Protocol monitor

Normally set to "0". If set to "1", communication can be checked, in case of trouble, without using a G3 tester or other tools.

When communication FSK data transmission or reception is made, the data is taken into the buffer. When communication is finished, the data is analyzed and printed out. When data is received with the line monitor (SW-A4 No. 8) set to "1" the reception level is also printed out.

SW-A4 No. 8 Line monitor

Normally set to "0". If set to "1", the transmission speed and the reception level are displayed on the LCD. Used for line tests.

SW-A5 No. 1, No. 2 Digital line equalization setting (Reception)

Line equalization when reception is to be set according to the line characteristics.

Setting should be made according to distance between the telephone and the telephone company central switching station.

SW-A5 No. 3, No. 4 Digital line equalization setting (Transmission)

Line equalization when transmitter is to be set according to the line characteristics.

Setting should be made according to distance between the telephone and the telephone company central switching station.

SW-A5 No. 5, No. 6 Digital cable equalizer setting (Reception for Caller ID)

Line equalization when reception for CALLER ID is to be set according to the line characteristics.

Setting should be made according to distance between the telephone and the telephone company central switching station.

SW-A5 No. 7 Error criterion

Used to select error criterion for sending back RTN when receiving image data.

SW-A5 No. 8 Anti junk fax check

When using the Anti junk fax function, set to "1".

SW-A6 No. 1, No. 2 Reserved

Set to "0".

SW-A6 No. 3 Disconnect the line when DIS is received in RX mode

Bit1= 0: When DIS signal is received during RX mode, the line is disconnected immediately.

Bit1= 1: When DIS signal is received during RX mode, the line is disconnected on the next tone.

SW-A6 No. 4 Equalizer freeze control (MODEM)

This switch is used to perform reception operation by fixing the equalizer control of modem for the line which is always in an unfavorable state and picture cannot be received.

* Usually, the control is executed according to the state of line where the equalizer setting is changed always.

SW-A6 No. 5 Equalizer freeze control 7200BPS only

Setting which specifies SW-A3 No. 6 control only in the condition of 7200BPS modem speed.

SW-A6 No. 6 CNG transmission in manual TX mode

When set to "1", fax transmit the CNG signal in case of manual transmission mode (User press the START key after waiting for the fax answering signal from handset or speaker).

SW-A6 No. 7 Initial compression scheme for sharp fax in TX mode

When set to "0", if the other fax is Sharp model, fax transmit the document by H2 mode. When set to "1", even if the other fax is Sharp model, fax transmit the document by MR mode.

SW-A6 No. 8 Modem speed automatic fallback when RX level is under -40dBm

When set to "1", if fax signal level is under -40dBm during reception, machine selects the slower modem speed automatically.

It is effective when noises occur on the received document due to the long distance communications.

SW-B1 No. 1 ~ No. 4 Recall interval

Choice is made for a redial interval for speed and rapid dial calls.

Use a binary number to program this. If set to 0 accidentally, 1 will be assumed.

SW-B1 No. 5 ~ No. 8 Recall times

Choice is made as to how many redials there should be.

SW-B2 No. 1 Dialing pause (sec/pause)

Pauses can be inserted between telephone numbers of direct dial connection. Selection of 4 sec or 2 sec pause is available.

SW-B2 No. 2 Dial tone detection (before auto dial)

Used to set YES/NO of dial tone detection in auto dialing.

SW-B2 No. 3 Reserved

Set to "0".

SW-B2 No. 4 Busy tone detection (after auto dial)

Used to set busy tone detection in auto dialing.

SW-B2 No. 5, No. 6 Waiting time after dialing

This is time waiting for the opponent's signals after dialing.

SW-B2 No. 7, No. 8 Reserved

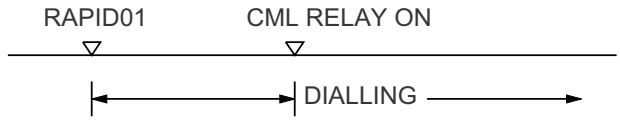
Set to "0".

SW-B3 No. 1 ~ No. 5 Reserved

Set to "0".

SW-B3 No. 6, No. 7 Auto dial mode Delay timer of before line connect

Delay time between the dial key input and line connection under the auto dial mode.



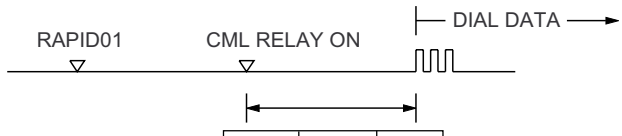
No.6	No.7	
0	0	0sec
0	1	1.5sec
1	0	3.0sec
1	1	4.5sec

SW-B3 No. 8 Hold key

Used to set YES/NO of holding function by the Hold key.

SW-B4 No. 1, No. 2 Auto dial mode Delay timer of after line connect

Delay time between the line connection and dial data output under the auto dial mode.



No.1	No.2	
0	0	1.7sec
0	1	3.0sec
1	0	3.6sec
1	1	4.0sec

SW-B4 No. 3 Dial mode

When using the pulse dial, set to 1. When using the tone dial, set to 0.

SW-B4 No. 4 Pulse → Tone change function by ✳ key

When setting to 1, the mode is changed by pressing the ✳ key from the pulse dial mode to the tone dial mode.

SW-B4 No. 5 Dial pulse make/break ratio (%)

When using the 33% make ratio pulse dial, set to "0".

When using the 40% make ratio pulse dial, set to "1".

SW-B4 No. 6, No. 7 Reserved

Set to "0".

SW-B4 No. 8 Recalling fixed only one time when dialing was unsuccessful without detecting busy tone signal

When dialing results in failure since the busy tone cannot be detected, recalling is fixed to one time.

Supplementary explanation

If time-out termination is made when dialing, only single recall is possible even if the setting time of recalls (SW-B1 No. 5 - No. 8) has been set to some times. This soft switch is added in order to meet FCC.

SW-B5 No. 1 ~ No. 5 DTMF signal transmission level (Low)

The dial signal of a push button telephone is called DTMF (dual-tone multi-frequency). These tones consist of two signals, one from a high group of frequencies and one from a low group of frequencies. Represent each of the push button telephone characters shown as below.

Low Frequency	High Frequency		
	1209Hz	1336Hz	1477Hz
697Hz	1	2	3
770Hz	4	5	6
852Hz	7	8	9
941Hz	*	0	#

The transmission level of DTMF signal is adjusted. (lower frequency)

00000: 0dBm

↓

11111: -15.5 dBm (-0.5dBm x 31)

SW-B5 No. 6 ~ No. 8 Reserved

Set to "0".

SW-B6 No. 1 ~ No. 5 DTMF signal transmission level (High)

The transmission level of DTMF signal is adjusted. (higher frequency)

00000: 0dBm

↓

11111: -15.5 dBm (-0.5dBm x 31)

SW-B6 No. 6 ~ No. 8 Reserved

Set to "0".

SW-C1 No. 1, No. 2 Reading slice (Binary)

Used to determine the set value of reading density in standard/fine mode. The standard setting is "00" (Factory setting is "00")

SW-C1 No. 3, No. 4 Reading slice (Half tone)

Used to determine the set value of reading density in half tone mode.

The standard setting is "00" (Factory setting is "00")

SW-C1 No. 5 Line density selection

Used to set the transmission mode which is automatically selected when the Resolution key is not pressed. In the copy mode, however, the fine mode is automatically selected unless the Resolution key is manually set to another mode.

SW-C1 No. 6 Reserved

Set to "0".

SW-C1 No. 7 MTF correction in half tone mode

This allows selection of MTF correction (dimness correction) in the half tone mode.

When "NO" (=1) is selected, the whole image becomes soft and mild.

Clearness of characters will be reduced. Normally set to "YES" (=0).

SW-C1 No. 8 Reserved

Set to "0".

SW-D1 No. 1 ~ No. 4 Number of rings for auto receive

When the machine is set in the auto receive mode, the number of rings before answering can be selected. It may be set from one to four rings using a binary number. Since the facsimile telephone could be used as an ordinary telephone if the handset is taken off the hook, it should be programmed to the user's choice. If the soft switch was set to 1, direct connection is made to the facsimile. If a facsimile calling beep was heard when the handset is taken off the hook, press the START key and put the handset on the hook to have the facsimile start receiving. If it was set to 0 accidentally, receive ring is set to 1.

NOTE: If the machine is set to answer after a large number of rings, it may not be able to receive faxes successfully. If you have difficulty receiving faxes, reduce the number of rings to a maximum of 6.

SW-D1 No. 5 Automatic switching manual to auto receive mode

This soft switch is used to select whether the machine should switch to the auto receive mode after 5 rings in the manual receive mode or remain in the same way as SW-D1 No. 1, No. 2, No. 3 and No. 4 "0"1"0"1"(5 rings).

SW-D1 No. 6 Reserved

Set to "0".

SW-D1 No. 7, No. 8 CI detect frequency

Detection frequency of ring signal for auto reception is set.
When set to No. 6=0, No. 7=0, frequency is set to PTT recommendation.
When set to No. 6=0, No. 7=1, frequency is set to 11.5Hz or more.
When set to No. 6=1, No. 7=0, frequency is set to 13.0Hz or more.
When set to No. 6=1, No. 7=1, frequency is set to 20.0Hz or more.

SW-D2 No. 1 ~ No. 3 Distinctive ringing setting (PATTERN 4 and 5 are for CANADA only)

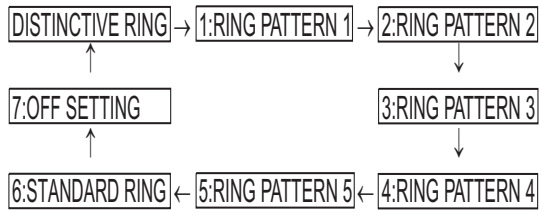
This function allows reception of services offered by USA and Canada telephone companies in which the customer contracts with the telephone company to have up to 4 telephone numbers (USA) or 6 telephone numbers (Canada) established for one line.

Each telephone number is signaled by a different ringing pattern, and the customer can allocate each number to a specific use.

<Example of use>

	Phone Number	Intended Purpose	Ring Pattern
Ring Pattern	555-1234	Voice Calls	Standard
	555-1235	Facsimile Calls	Pattern 1
	555-1236	Answering Machine	Pattern 2
	555-1237	PC Modem	Pattern 3

<Distinctive Ringing Timing Specifications>

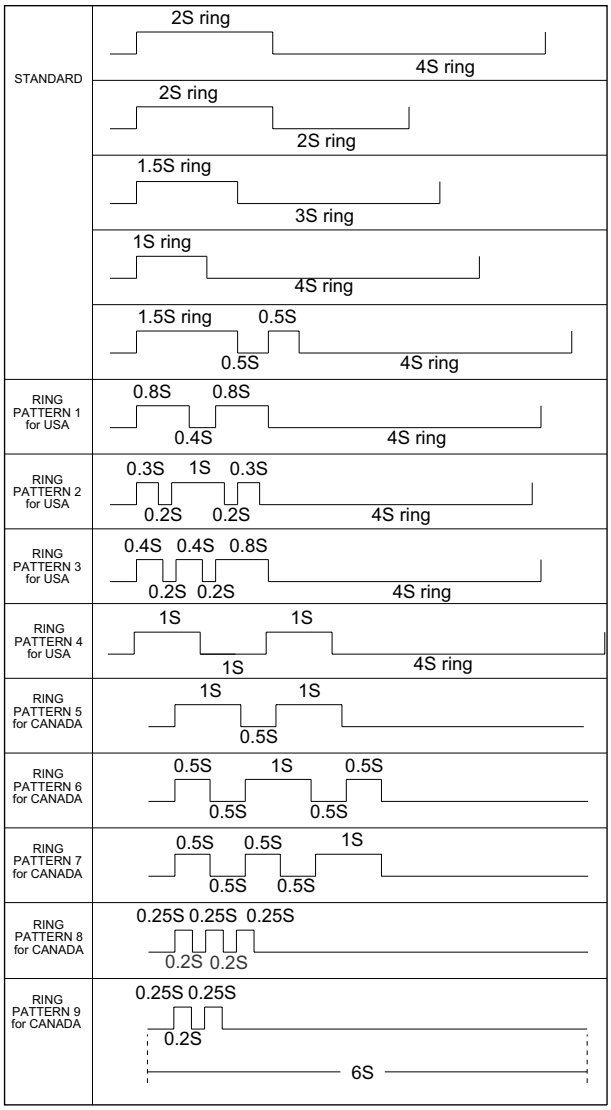


- Ring Pattern

  STANDARD has 5 ring patterns, and DISTINCTIVE has 9 patterns, Ring Patterns 1~4 for USA, and 5~9 for Canada. However, to make the setting procedure as easy as possible for the user to understand these patterns are grounded as follows:

<Optional Setting>

1) RING PATTERN 1	RING PATTERN①	for USA
	RING PATTERN④	for USA
	RING PATTERN⑤	for Canada
2) RING PATTERN 2	RING PATTERN②	for USA
	RING PATTERN⑥	for Canada
3) RING PATTERN 3	RING PATTERN③	for USA
	RING PATTERN⑦	for Canada
4) RING PATTERN 4	RING PATTERN⑧	for Canada
5) RING PATTERN 5	RING PATTERN⑨	for Canada
6) STANDARD RING		
7) OFF SETTING		



SW-D2 No. 4 Reserved

Set to "0".

SW-D2 No. 5 Caller ID function

Used for Caller ID function.

SW-D2 No. 6 Caller ID detect during CI off

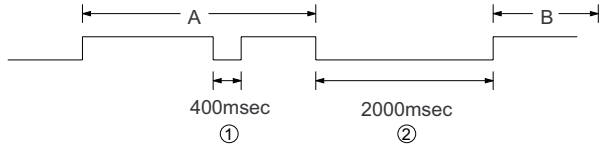
Detection of caller ID signal is performed as follows:
0:First CI OFF only
1:All of CI OFF

SW-D2 No. 7, No. 8 Reserved

Set to "0".

SW-D3 No. 1 ~ No. 5 CI off detection timer (0-1550ms setting by 50ms step)

Set the minimum time period of CI signal interruption which affords to be judged as a CI OFF section with 50ms steps.
(Example).



01110 (50ms ~ 14):

700ms (CI interruption>700ms:Judged as a CI OFF section)
The section 1 is not judged as a CI OFF section, the CI signal A is counted as one signal.
The section 2 is judged as a CI OFF section, the CI signal B is considered as the second signal.

00111 (50ms ~ 7):

350ms (CI interruption>350ms:Judged as a CI OFF section)
The section 1 is judged as a CI OFF section, and the CI signal A is counted as two signals.
The section 2 is judged as a CI OFF section, and the CI signal B is considered as the third signal.

SW-D3 No. 6 ~ No. 8 Reserved

Set to "0".

SW-E1 No. 1 ~ No. 8 Reserved

Set to "0".

SW-E2 No. 1 ~ No. 8 Reserved

Set to "0".

SW-E3 No. 1 ~ No. 8 Reserved

Set to "0".

SW-F1 No. 1, No. 2 DTMF detect time

Used to set detect time of DTMF (Dual Tone Multi Frequency) used in remote reception (5 ✕✕).
The longer the detect time is, the less the error detection is caused by noises.

SW-F1 No. 3 Protection of remote reception (5 ✕✕) detect

Used to set the function of remote reception (5 ✕✕). When set to "1", the remote reception function is disabled.

SW-F1 No. 4 Remote reception with GE telephone

(Corresponding to TEL mode by GE) P. B. X.

"1": Compatible with TEL mode by GE

"0": Not compatible

- When sending (5 ✕✕) for remote reception with a GE manufactured telephone remote reception may not take place because of special specifications in their DTMF. To overcome this, a soft SW is provided to change the modem setting to allow for remote reception.
- If this soft SW is set to "1", other telephone sets may be adversely affected.

SW-F1 No. 5 ~ No. 8 Remote operation code figure by external TEL (0 ~ 9)

Remote operation codes can be changed from 0 through 9. If set to greater than 9, it defaults to 9. The "5 ✕✕ " is not changed.
Ex-7 ✕✕ (Default: 5 ✕✕)

SW-F2 No. 1 CNG detection in STAND-BY mode

When setting to "1", the CNG signal detection function during stand-by stops.

SW-F2 No. 2, No. 3 Reserved

Set to "0".

SW-F2 No. 4, No. 5 Number of CNG detect (STAND-BY mode)

Used for detection of CNG in 1 to 4 pulses.

SW-F2 No. 6 ~ No. 8 Reserved

Set to "0".

SW-G1 No. 1 ~ No. 8 Reserved

Set to "0".

SW-G2 No. 1 ~ No. 8 Reserved

Set to "0".

SW-G3 No. 1 ~ No. 8 Reserved

Set to "0".

SW-H1 No. 1 ~ No. 8 Reserved

Set to "0".

SW-H2 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I1 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I2 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I3 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I4 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I5 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I6 No. 1 ~ No. 8 Reserved

Set to "0".

SW-I7 No. 1 ~ No. 8 Reserved

Set to "0".

SW-J1 No. 1, No. 2 Reserved

Set to "0".

SW-J1 No. 3 Sender's phone number setting

Used to make a choice of whether the registered sender's phone number can be changed or not. If the switch is set to "1", new registration of the sender's phone number is disabled to prevent accidental wrong input.

SW-J1 No. 4, No. 5 Reserved

Set to "0".

SW-J1 No. 6 Summer time setting

This is used to set YES/NO of automatic clock adjustment for European Summer time.

SW-J1 No. 7, No. 8 Ringer volume

Used to adjust ringing volume.

SW-J2 No. 1, No. 2 Speaker volume (3 stages)

Used to adjust sound volume from a speaker.

SW-J2 No. 3 Reserved

Set to "0".

SW-J2 No. 4, No. 5 Handset receiver volume

Used to adjust sound volume from a handset receiver volume.

SW-J2 No. 6 ~ No. 8 Reserved

Set to "0".

SW-J3 No. 1 Reserved

Set to "0".

SW-J3 No. 2 ~ No. 4 Communication result printout (Transaction report)

Every communication, the result can be output. As usual, it is set to print the timer sending communication error alone. If No. 2: 0 No. 3: 1 No. 4: 0 are set, printing is always on (printed even if it is normally ended).

000: Error, timer and memory sending/receiving

001: Sending

010: Continuous printing

011: Not printed

100: Communication error

SW-J3 No. 5 ~ No. 8 Reserved

Set to "0".

SW-K1 No. 1 ~ No. 8 Reserved

Set to "0".

SW-L1 No. 1 ~ No. 4 Reserved

Set to "0".

SW-L1 No. 5 Cut off mode (COPY mode)

Whether the excessive part is printed on the next recording paper or discarded is selected to copy a document which is longer than the recording paper.

SW-L1 No. 6 A4 Paper enable

The use of recording paper of A4 is enabled.

SW-L1 No. 7 LEGAL and LETTER paper enable

The use of recording paper of LEGAL and LETTER is enabled.

SW-L1 No. 8 Reserved

Set to "0".

SW-L2 No. 1, No.2 Paper set size

At present size of the recording paper.

SW-L2 No. 3 Automatic reduce of receive

If set to 1, it is reduced automatically when receiving.

SW-L2 No. 4 ~ No. 8 Reserved

Set to "0".

SW-M1 No. 1 ~ No. 8 Reserved

Set to "0".

SW-M2 No. 1 ~ No. 8 Reserved

Set to "0".

SW-N1 No. 1 ~ No. 8 Reserved

Set to "0".

SW-N2 No. 1 ~ No. 8 Reserved

Set to "0".

SW-N3 No. 1 ~ No. 8 Reserved

Set to "0".

SW-O1 No. 1 ~ No. 8 Reserved

Set to "0".

SW-O2 No. 1 ~ No. 8 Reserved

Set to "0".

SW-O3 No. 1 ~ No. 8 Reserved

Set to "0".

SW-O4 No. 1 ~ No. 8 Reserved

Set to "0".

SW-O5 No. 1 ~ No. 8 Reserved

Set to "0".

SW-O6 No. 1 ~ No. 8 Reserved

Set to "0".

SW-P1 No. 1 ~ No. 8 Reserved

Set to "0".

SW-P2 No. 1 Reserved

Set to "0".

SW-P2 No. 2, No. 3 Reserved

Set to "1".

SW-P2 No. 4 Reserved

Set to "0".

SW-P2 No. 5 ~ No. 8 Reserved

Set to "1".

SW-P3 No. 1 ~ No. 8 Reserved

Set to "0".

SW-P4 No. 1 ~ No. 8 Reserved

Set to "0".

SW-P5 No. 1 ~ No. 8 Reserved

Set to "0".

SW-P6 No. 1 Ink save mode

If set to “1”, printing is done with half of ink.

SW-P6 No. 2 Half tone copy ink save mode printing fixed

If set to “1”, copy of half tone resolution is printed with ink save mode regardless of SW-P6 No. 1 setting. If set to “0”, copy of half tone resolution is printed based on SW-P6 No. 1 setting.

SW-P6 No. 3 ~ No. 8 Reserved

Set to "0".

SW-P7 No. 1 ~ No. 3 Reserved

Set to "0".

SW-P7 No. 4, No. 5 End buzzer

The sounding length of the buzzer for normal end of operation set.

SW-P7 No. 6 Key error/ Communication error beep

When set to “1”, the machine will not sound the alert beep when the communication error/printer error/key error are occurred.

SW-P7 No. 7 End buzzer (3sec)

When set to “1”, the machine will not sound the end-beep (3sec) when the communication or copy etc. has finished normally.

SW-P7 No. 8 Key touch tone

When set to “1”, the machine will not sound the key touch tone (except for key error tone).

[3] Troubleshooting

Refer to the following actions to troubleshoot any of the problems mentioned in 1-4.

[1] A communication error occurs.

[2] Image distortion produced.

[3] Unable to do overseas communication.

[4] Communication speed slow due to FALLBACK.

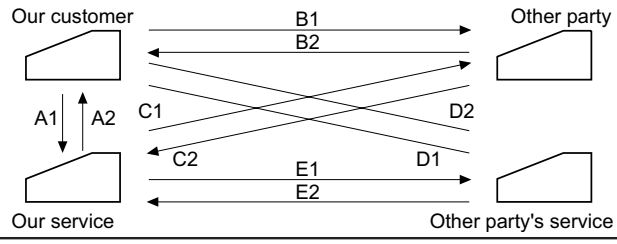
- In crease the transmission level SOFT SWITCH A4-1, 2, 3, 4, 5.
  May be used in case [1] [2] [3].
- Decrease the transmission level SOFT SWITCH A4-1, 2, 3, 4, 5.
  May be used in case [3].
- Apply line equalization SOFT SWITCH A2-1, 2, 3, 4.
  May be used in case [1] [2] [3] [4].
- Slow down the transmission speed SOFT SWITCH A2-1, 2, 3, 4.
  May be used in case [2] [3].
- Replace the LIU PWB.
  May be used in all cases.
- Replace the control PWB.
  May be used in all cases.
- If transmission problems still exist on the machine, use the following format and check the related matters.

TO: ATT: Ref.No. :

CC: ATT: Date :

FM: Dept :

Sign :

***** Facsimile communication problem *****				Ref.No.:
From: Mr.	Fax Tel No.:			Date:
Our customer	Name			Tel No.
	Address			Fax No.
	Contact person			Model name
Other party	Name			Tel No.
	Address			Fax No.
	Contact person			Model name
Problem mode	Line: Domestic / international		Model: G3	Phase: A, B, C, D.
	Reception / Transmission	Automatic reception / Manual reception		
		Automatic dialing / Manual dialing / Others		
Frequency:		%	ROM version:	
Confirmation item				Please mark problem with an X. No problem is: 0.

A1	A2	B1	B2	C1	C2	D1	D2	E1	E2

Transmission level setting is ( ) dB at our customer

Transmission level ( ) dBm
Reception level ( ) dBm
By level meter at B1 and B2

Comment	
Countermeasure	

**** Please attach the G3 data and activity report on problem. ****

* Please complete this report before calling the "TAC" hotline if problem still occurs.

[4] Error code table

1. Communication error code table

1.1. G3 Transmission

Code	Final received signal	Error Condition (Receiver side)
0	Incomplete signal frame	Cannot recognize bit stream after flag
1	NSF, DIS	Cannot recognize DCS signal by echo etc. Cannot recognize NSS signal (FIF code etc.)
2	CFR	Disconnects line during reception (carrier missing etc.)
3	FTT	Disconnects line by fall back
4	MCF	Disconnects line during reception of multi page Cannot recognize NSS, DCS signal in the case of mode change
5	PIP or PIN	The line is hung up without replying to telephone request from the receiving party.
6	RTN or RTP	Cannot recognize NSS, DCS signal after transmit RTN or RTP signal.
7	No signal or DCN	No response in receiver side or DCN signal received* (transmitter side)
8	-	Owing to error in some page the error could not be corrected although the specified number of error retransmissions were attempted.
11	-	Error occurred after or while reception by the remote (receiving) machine was revealed to be impossible.
12	-	Error occurred just after fallback.
13	-	Error occurred after a response to retransmission end command was received.

1.2. G3 Reception

Code	Final received signal	Error Condition (Receiver side)
0	Incomplete signal frame	Cannot recognize bit stream after flag
1	NSS, DCS	Cannot recognize CFR or FTT signal Disconnects line during transmission (line error)
2	NSC, DTC	Cannot recognize NSS signal (FIF code etc.)
3	EOP	Cannot recognize MCF, PIP, PIN, RTN, RTP signal
4	EOM	Cannot recognize MCF, PIP, PIN, RTN, RTP signal in the case of mode change
5	MPS	The line is hung up without replying to communication request.
6	PR1-Q	Cannot recognize PIP, PIN signal in the case of TALK request
7	No signal or DCN	No response in transmitter (cannot recognize DIS signal) or DCN signal received* (receiver side)
8	-	Error occurred upon completion of reception of all pages.
9	-	Error occurred when mode was changed or Transmission/Reception switching was performed.
10	-	Error occurred during partial page or physical page reception.
11	-	Error occurred after or during inquiry from the remote (transmitting) machine as to whether reception is possible or not.
12	-	Error occurred during or just after fallback.
13	-	Error occurred after the retransmission end command was received.

CHAPTER 3. MECHANISM BLOCKS

[1] General description

1. Document feed block and diagram

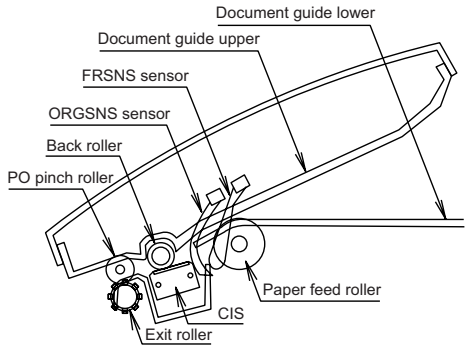


Fig. 1

2. Document feed operation

1) The original, which is set in the document hopper, feeds automatically when the FRSNS sensor is activated. This in turn activates the drive motor which drives the paper feed roller. The document stops when the lead edge is detected by the ORGSNS sensor.
2) The lead edge of the original is fed a specified number of pulses after the lead edge of the document is detected for the reading process to begin.
3) The trailing edge of the original is fed a specific number of pulses after the trailing edge of the document deactivates the ORGSNS sensor. The read process then stops and the original is discharged.
4) When the FRSNS sensor is in the OFF state (any document is not set up in the hopper guide), the drive will be stopped when the document is discharged.

3. Hopper mechanism

3.1. General view

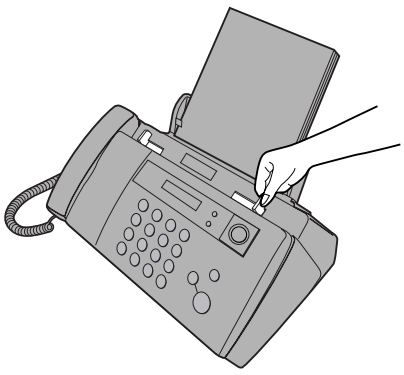


Fig. 2

The hopper section contains document guides that are used to adjust the hopper to the width of the original document. This ensures that the original feeds straight into the fax machine for scanning.

Document width: 148 mm to 216 mm (A5 longitudinal size to Letter longitudinal size)

NOTE: Adjust the document guide after setting up the document.

3.2. Automatic document feed

1) Use of the paper feed roller and separate plate ensures error-free transport and separation of documents. The paper feed plate spring presses the document to the paper feed roller to assure smooth feeding of the document.
2) Document separation method: Separate plate

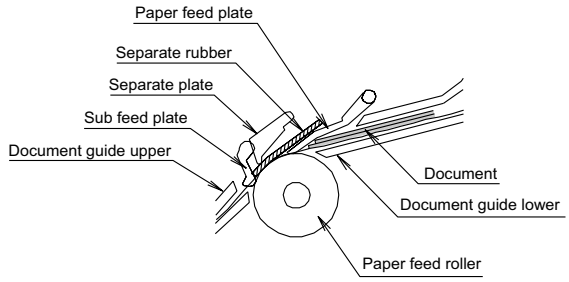


Fig. 3

3.3. Documents applicable for automatic feed

	10 sheets	1sheet(Manual)
Paper weight	70 kg 21.5 lbs. (80 g/m^2)	70 kg ~ 135 kg 14 lbs. ~ 42 lbs. (52 g/m^2 ~ 157g/m^2)
Paper thickness (ref.)	0.1 mm	0.1 mm ~ 0.18mm
Paper size	LGL (216 mm x 355.6 mm) A4 (210 mm x 297 mm) LTR (216 mm x 279 mm)	
Feeder capacity	A4/LTR: 10 sheets max. LGL : 5 sheets max.	

NOTE: Double-side coated documents and documents on facsimile recording paper should be inserted manually. The document feed quantity may be changed according to the document thickness.

Documents corresponding to a paper weight heavier than 70 kg (80 g/m^2) and lighter than 135 kg (157 g/m^2) are acceptable for manual feed.

Documents heavier than 135 kg (157 g/m^2) in terms of the paper weight must be duplicated on a copier to make it operative in the facsimile.

3.4. Loading the documents

1. Make sure that the documents are of suitable size and thickness, and free from creases, folds, curls, wet glue, wet ink, clips, staples and pins.
2. Place documents face down in the hopper.
   i) Adjust the document guides to the document size.
   ii) Align the top edge of documents and gently place them into the hopper. The first page under the stack will be taken up by the feed roller to get ready for transmission.

NOTE: 1) Curled edge of documents, if any, must be straightened out.
2) Do not load the documents of different sizes and/or thicknesses together.

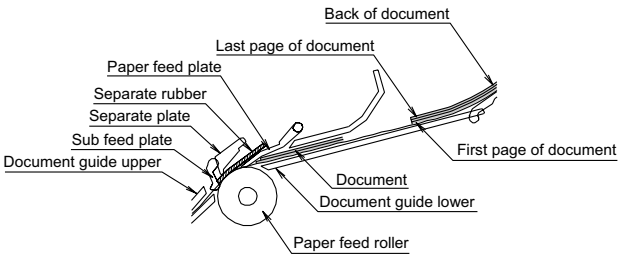


Fig. 4

3.5. Documents requiring use of document carrier

1) Documents smaller than 148mm (W) x 140mm (L).
2) Documents thinner than the thickness of 0.06mm.
3) Documents containing creases, folds, or curls, especially those whose surface is curled (maximum allowable curl is 5mm).
4) Documents containing tears.
5) Carbon-backed documents. (Insert a white sheet of paper between the carbon back and the document carrier to avoid transfer of carbon to the carrier.)
6) Documents containing an easily separable writing material (e.g., those written with a lead pencil).
7) Transparent documents.
8) Folded or glued documents.
   Document in document carrier should be inserted manually into the feeder.

4. Document release

4.1. General

To correct a jammed document or to clean the document running surface, pull the insertion side of document center of the operation panel. To open the upper document guide, the operation panel must be opened first.

5. Recording block

1) The pulse motor is rotated by the PICK UP ROLLER to feed the recording sheet. The PICKUP ROLLER feeds one by one from the top sheet.
2) The recording sheet contacts the P-IN SENSOR.
3) The FEED ROLLER rotates in the reverse direction of paper feed (refer to the figure of PICKUP ROLLER). The tip of recording sheet is set parallel to the FEED ROLLER when it reaches to the FEED ROLLER and the PRESS ROLLER after through the PICK UP ROLLER.
4) Then the FEED ROLLER rotates in the paper feed direction to feed the recording sheet downwards. (refer to the figure of PAPER FEED)
5) The CARTRIDGE prints the recording sheet, which is then ejected by the EXIT ROLLER and STAR WHEEL.

5.1. General view

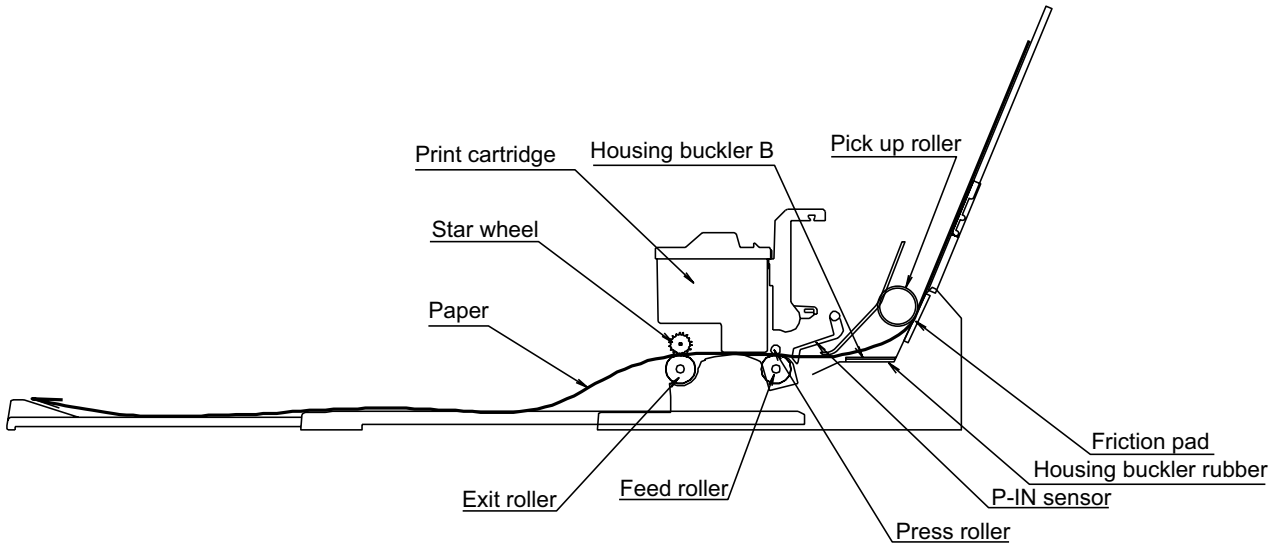


Fig. 5

[2] Ink jet printer

1. Engine specifications

1.1. Mechanism

Resolution:600dpi x 600dpi address ability

Print speed:2.9PPM text with black cartridge

Print swath:8 inches

Duty cycle:250 pages per month average

Dimensions:330mm x 100mm x 130mm

Weight:1.98punds(900g)(1p=453g)

Acoustics:50db in letter quality mode

1.2. Electrical

No electrical hardware included with the type B engine except for the carrier drive stepping motor, the Sensor FPC assembly which includes a photo interrupter for sensing home position, the carrier cables, and the printhead cable.

2. Abbreviations

EOF End-of Form

ESD Electrostatic Discharge

FRU Field Replaceable Unit

HVPS High Voltage Power Supply

LVPS Low Voltage Power Supply

OEM Original Equipment Manufacturer

POST Power-On Self Test

V ac Volts alternating current

V dc Volts direct current

ZIF Zero Insertion Force

3. Diagnostic information

3.1. Print cartridge

Black Print Cartridge 208 Nozzles

Pigment based(Water proof)

initial cartridge

Approx.yield 300 letter pages at 4%coverage

Replacement cartridge:SHARP **UX-C70B**

Approx.yield 600 letter pages at 4%coverage

* When Ink Save mode is enabled.

3.2. Start

Power-On Self Test (POST) Sequence

When you turn the printer on it performs a POST. Turn the machine on and check for a correct POST operation by observing the following:

1. The carrier moves.
2. The paper feed gears turn.
3. After 30 seconds the carrier moves over the maintenance station and caps the printhead.
4. All motors stop

4. Circuit description

4.1. General description

The compact design of Ink PWB is obtained by using Head Driver IC and Home position Sensor.

4.2. Electrical system

The PWB provides mechanical control for Ink Jet Printer. Fig. 1 shows the interconnection of PWB and other electrical component in the print mechanism.

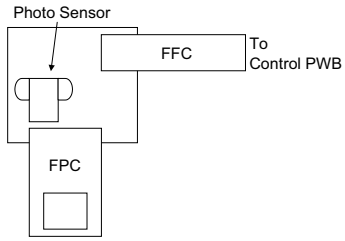


Fig. 1

4.3. Electrical overview

The information in this section appears in a sequence relative to the system diagram in the following figure.

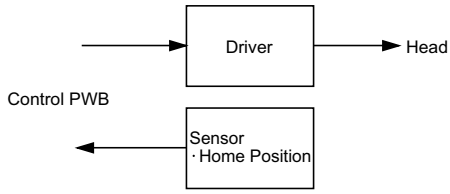


Fig. 2

4.4. Power supply connector

The mechanism requires two voltages (+3.3V, +11.82V and +30V). These three voltages supplied from CNHEAD1 connector.

4.5. Host interface connector

FFC on the Ink PWB provides 23 lines from the host unit, for control of various operating options available to the host. The two primary functions of the host interface are:

Printing data for the Ink Jet Printer

Error status to the host

4.6. Driver IC

One driver IC drive 208 (MONO) nozzles on the cartridge. This driver IC, located on the Ink PWB, also connected back to the ASIC, on Control PWB.

4.7. Ink cartridge carrier

The carriage connects via a FPC on the Ink PWB. The ink cartridge contacts connect to the carriage contacts. The ASIC controls the carriage and ink cartridge.

4.8. Home position

Measure the position of the carrier unit by reading the scale of the encoder ((1) in the figure) with the photo sensor ((2) in the figure). When power is supplied, the carrier unit moves right until it contacts the dead-end of the right main frame ((3) in the figure). We call this home position and hereinafter, regard as the starting point to measure the position of the carrier unit by reading the scale of the encoder with the photo sensor. The home position shall be applied to all operations.

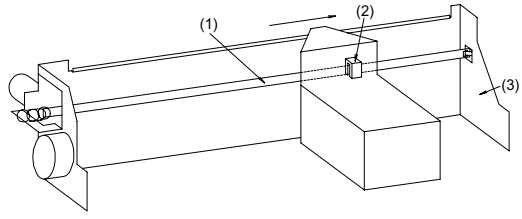
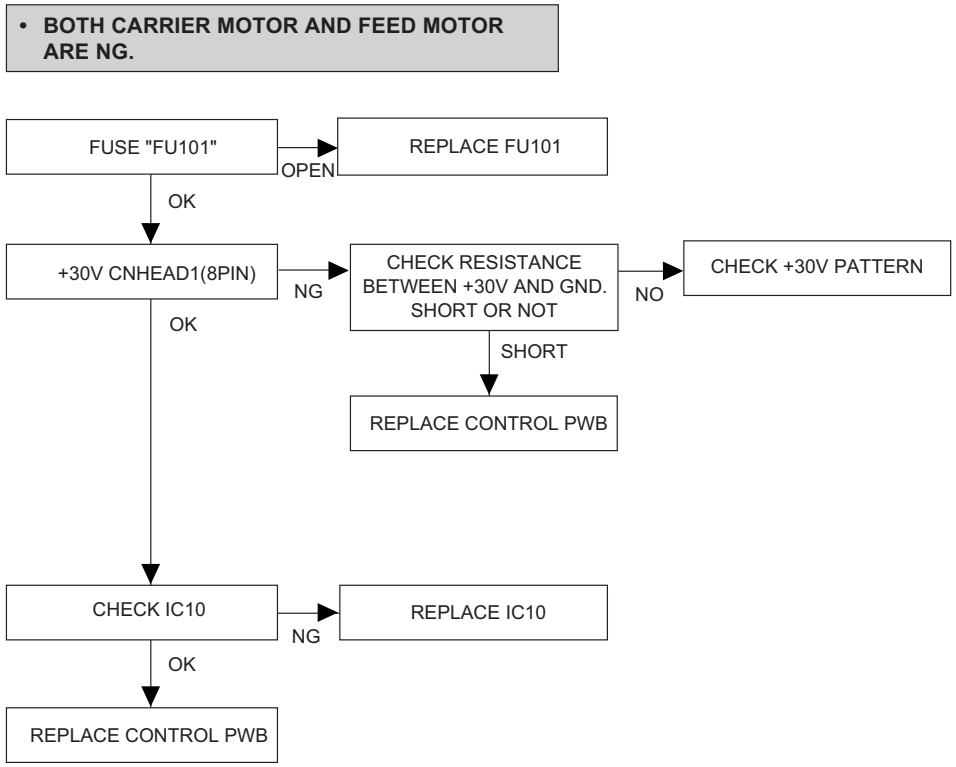
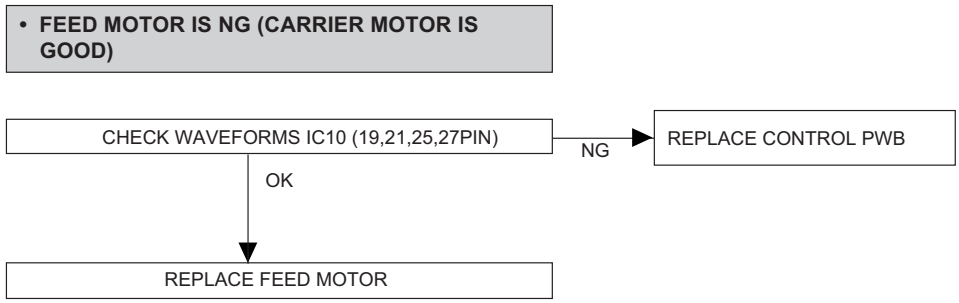
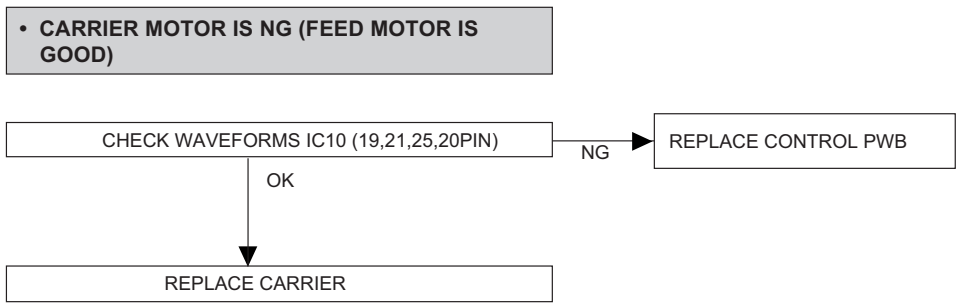


Fig. 3

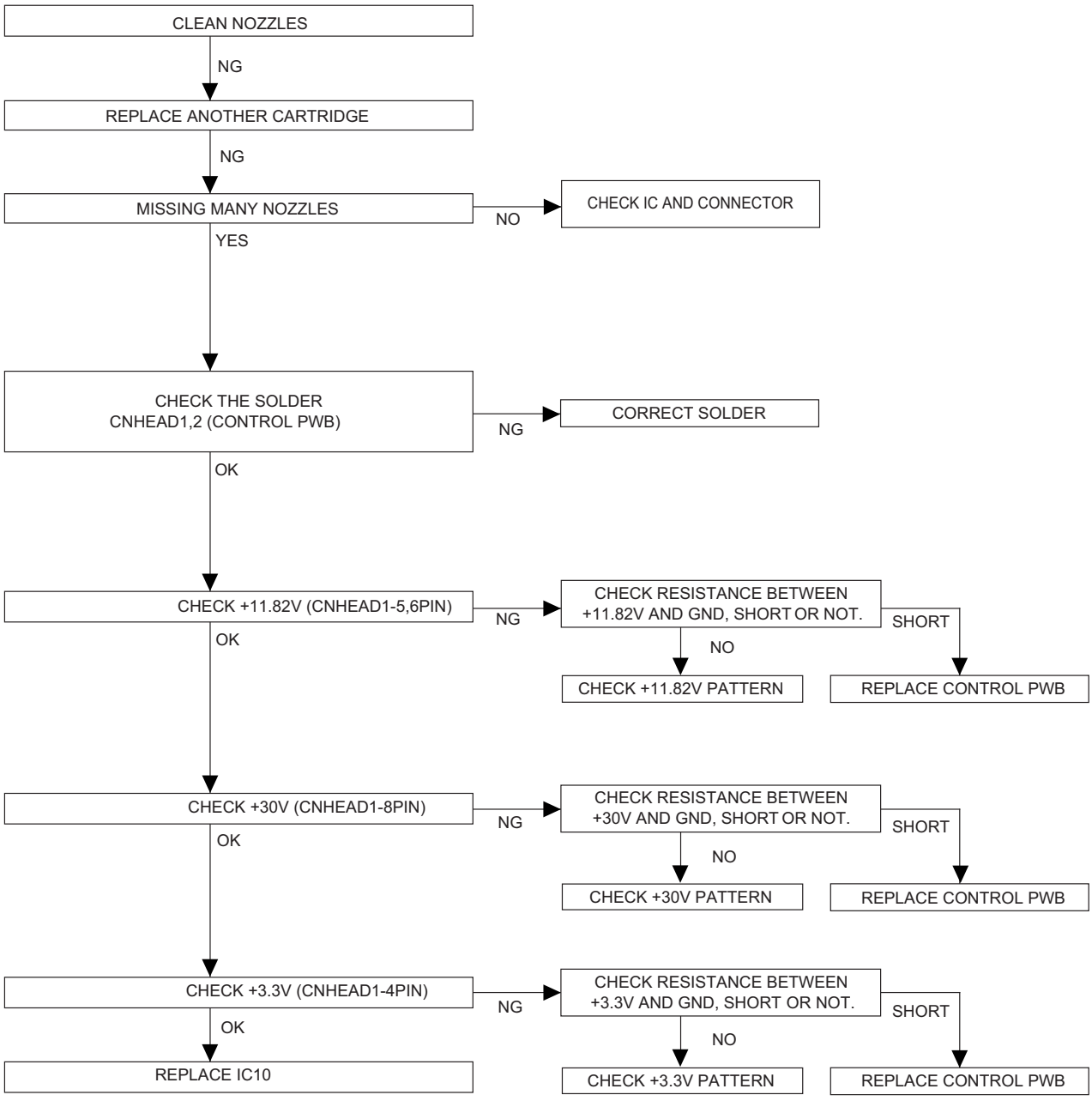
5. Overall troubleshooting of Printer







• MISSING NOZZLES (RESULT OF CHECK PATTERN OR CLEAN NOZZLES)



[3] Disassembly and assembly procedures

- This chapter mainly describes the disassembly procedures. For the assembly procedures, reverse the disassembly procedures.
- Easy and simple disassembly/assembly procedures of some parts and units are omitted. For disassembly and assembly of such parts and units, refer to the Parts List.
- The numbers in the illustration, the parts list and the flowchart in a same section are common to each other.
- To assure reliability of the product, the disassembly and the assembly procedures should be performed carefully and deliberately.

1	ASF cover/Top cabinet/Document guide under

Parts list (Fig. 1)

No.	Part name	Qty
1	Mechanism unit	1
2	Screw (3x12)	2
3	Screw (3x10)	1
4	ASF cover	1
5	Screw (3x12)	3
6	Top cabinet	1
7	Document guide under	1

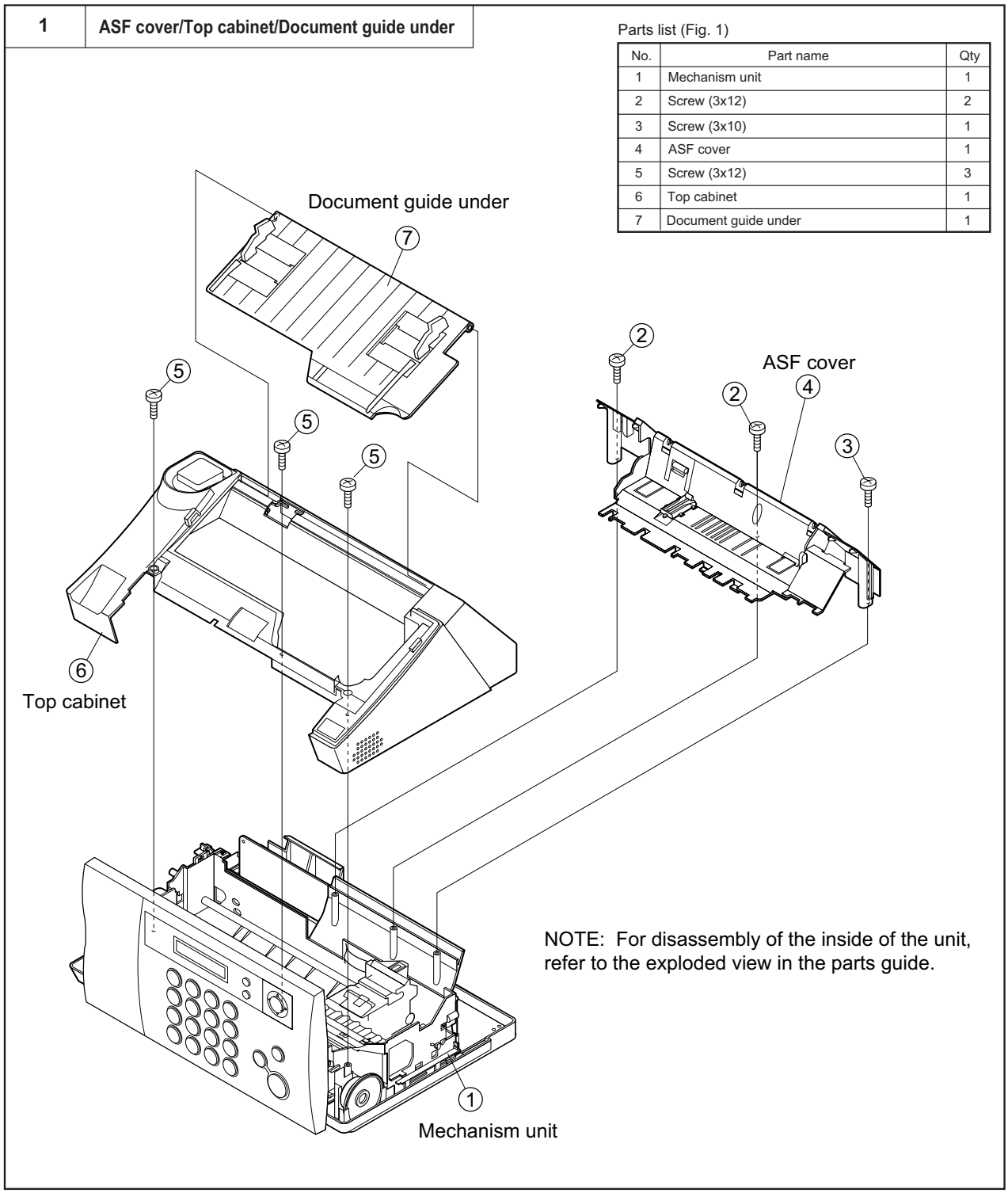


Fig.1

2	**Main frame unit/Operation panel unit/ Speaker**

NOTE: For disassembly of the inside of the unit, refer to the exploded view in the parts guide.

Parts list (Fig. 2)

No.	Part name	Qty	No.	Part name	Qty
1	Mechanism unit	1	6	Speaker spring	1
2	Connector	2	7	Speaker	1
3	Screw (3x10)	5	8	Screw (3x10)	1
4	Screw (3x10)	1	9	Operation panel unit	1
5	Screw (3x6)	1	10	Main frame unit	1

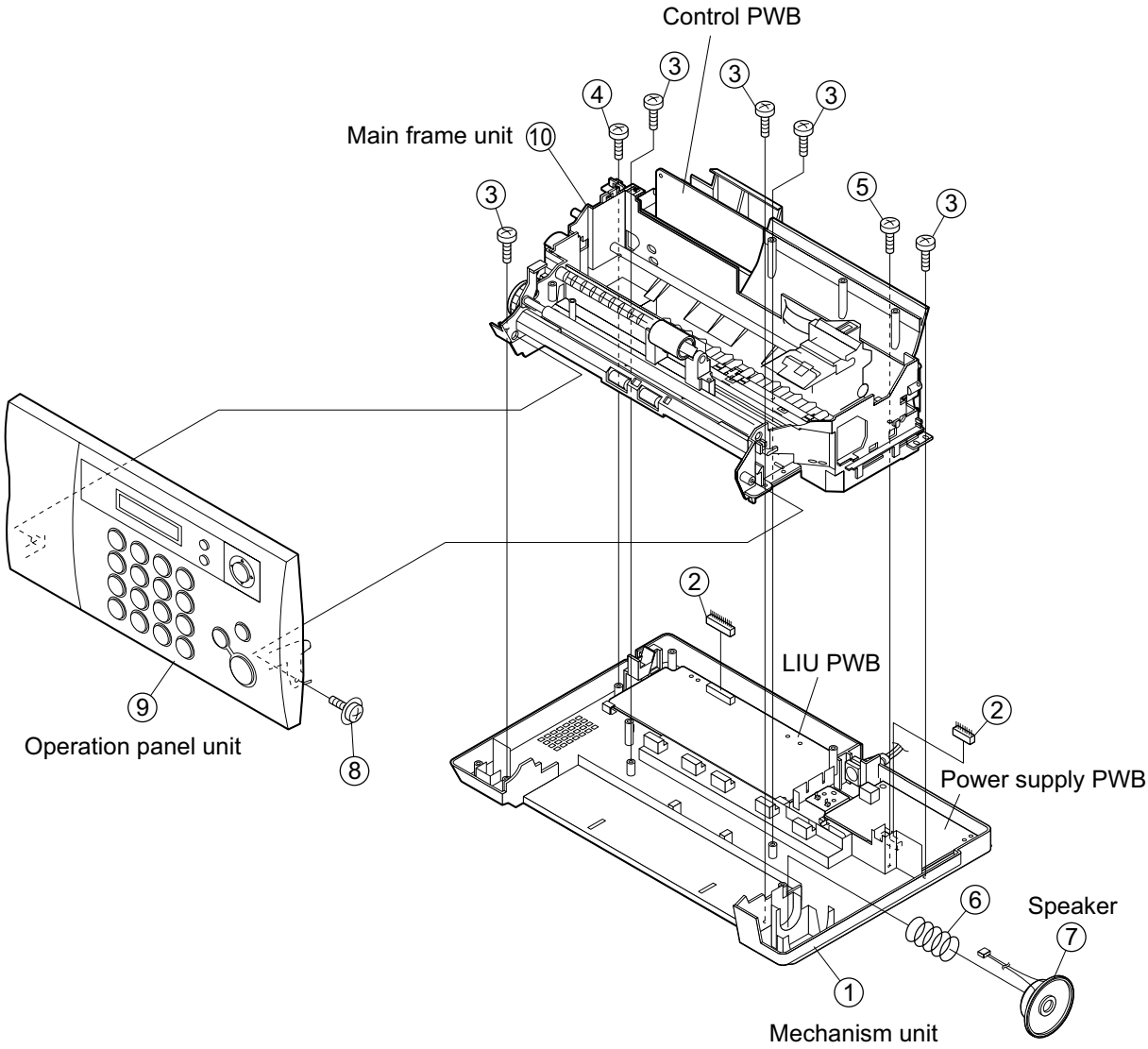


Fig.2

3	**PWB's**

NOTE: For disassembly of the inside of the unit, refer to the exploded view in the parts guide.

Parts list (Fig. 3)

No.	Part name	Qty	No.	Part name	Qty
1	Mechanism unit	1	7	Power supply PWB unit	1
2	Screw (3x10)	2	8	Screw (3x6)	3
3	Screw (3x6)	1	9	Sheet	1
4	LIU PWB unit	1	10	Connector	5
5	Screw (3x10)	1	11	Flat cable	2
6	Screw (4x6)	1	12	Control PWB unit	1

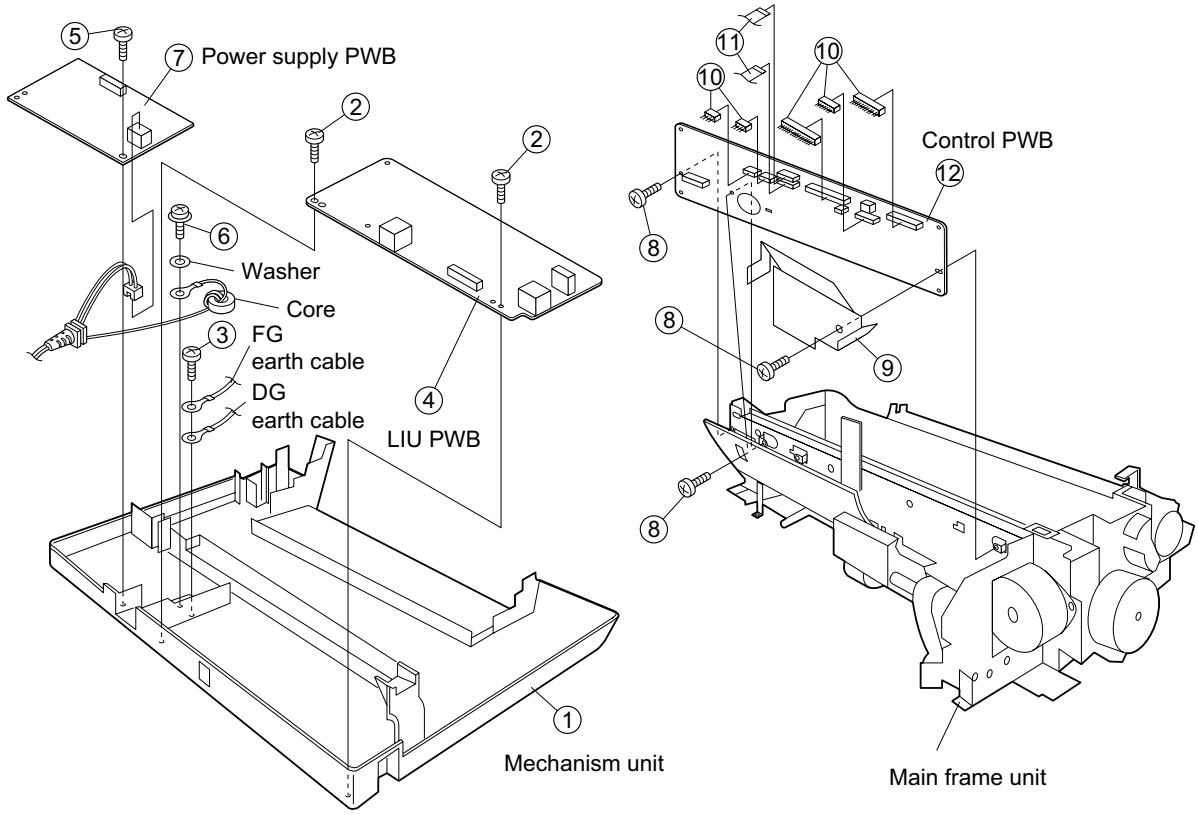
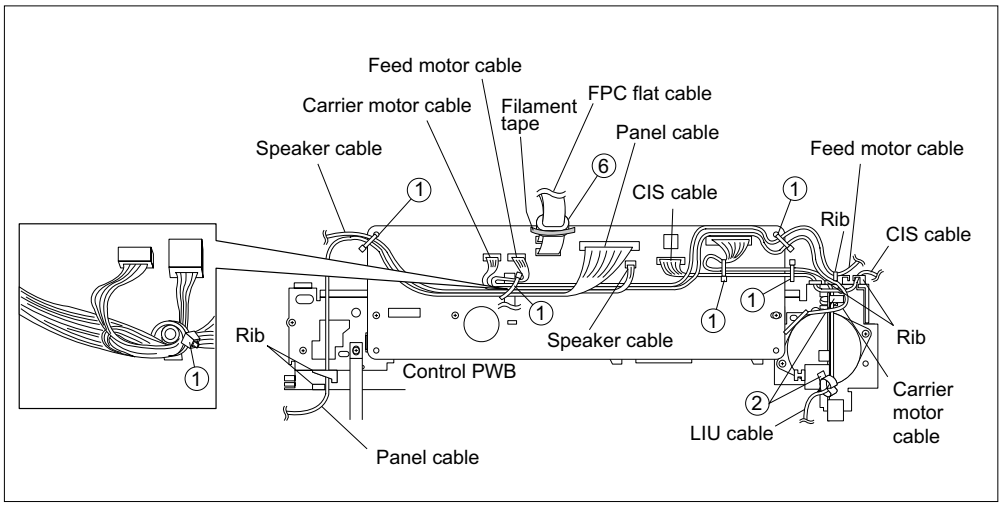


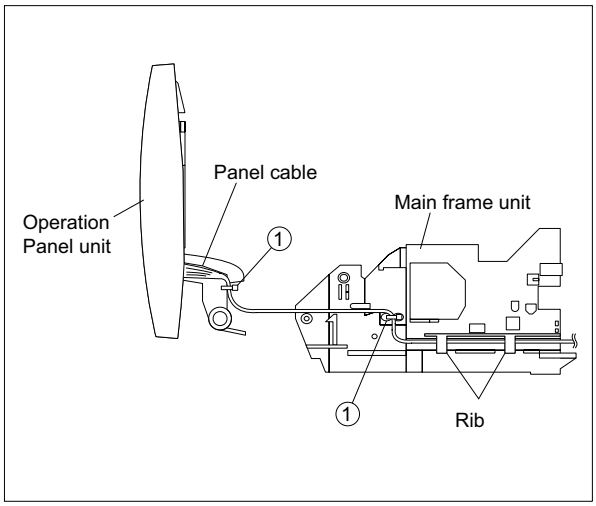
Fig.3

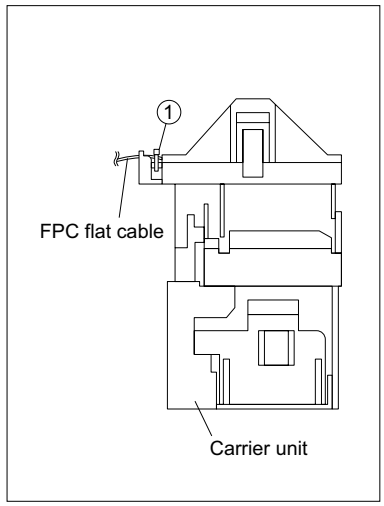
4 Wire treatment

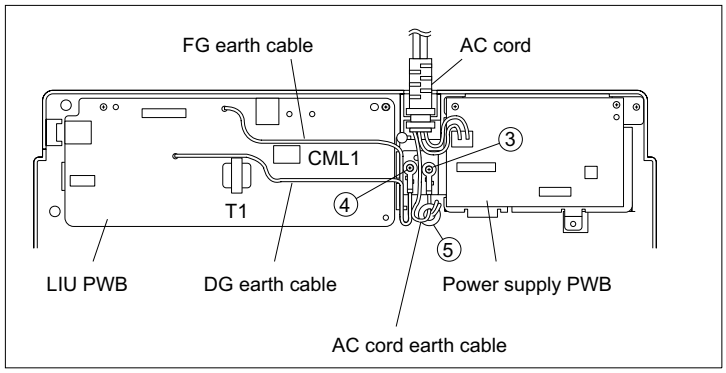
Parts list (Fig. 4)

No.	Part name	Qty
1	Band (100mm)	8
2	Wire holder	2
3	Screw (4x6)	1
4	Screw (3x6)	1
5	Core (F2147)	1
6	Core (F0049)	1







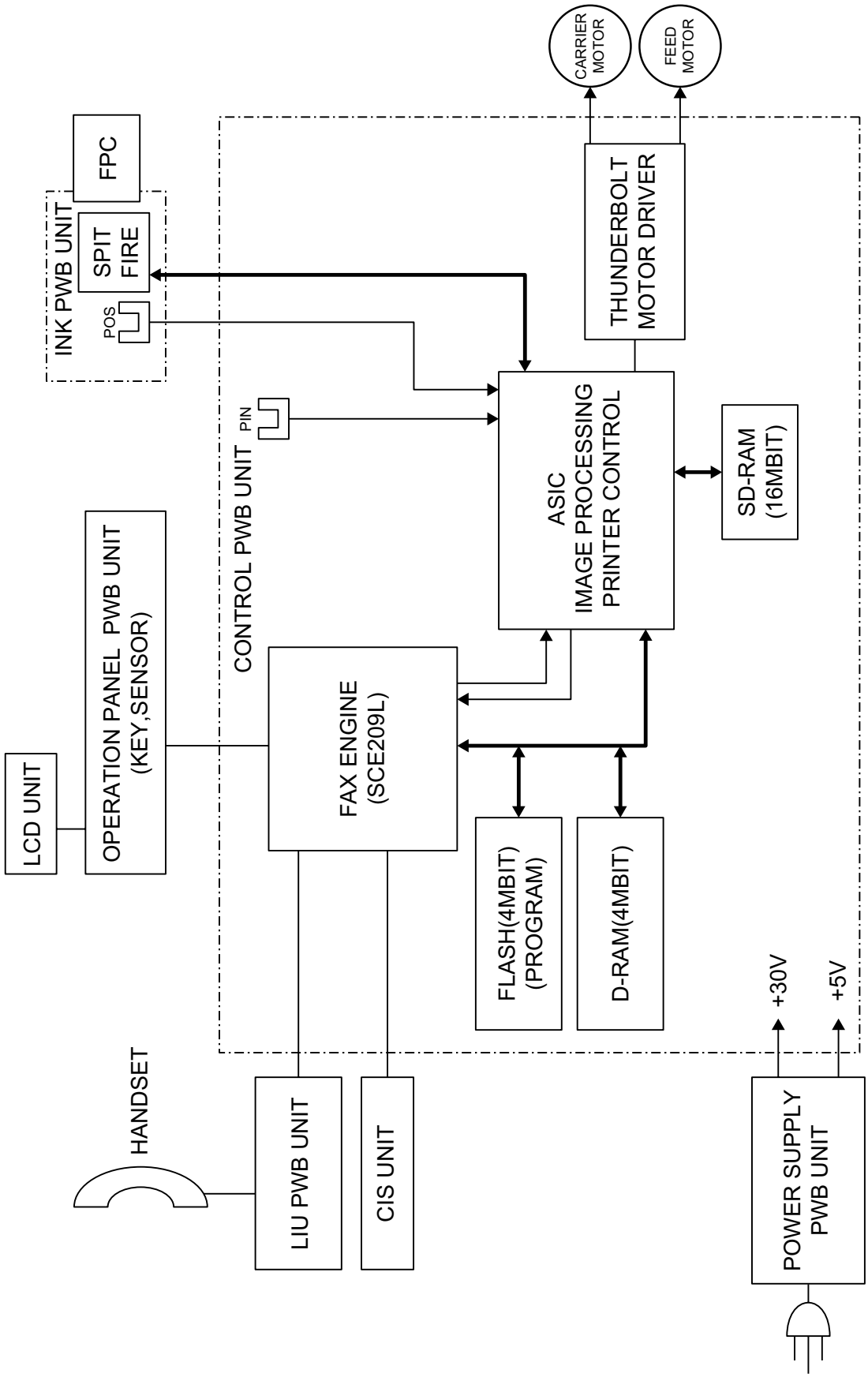


⑤ : The AC cord earth cable puss to the core 2 times.

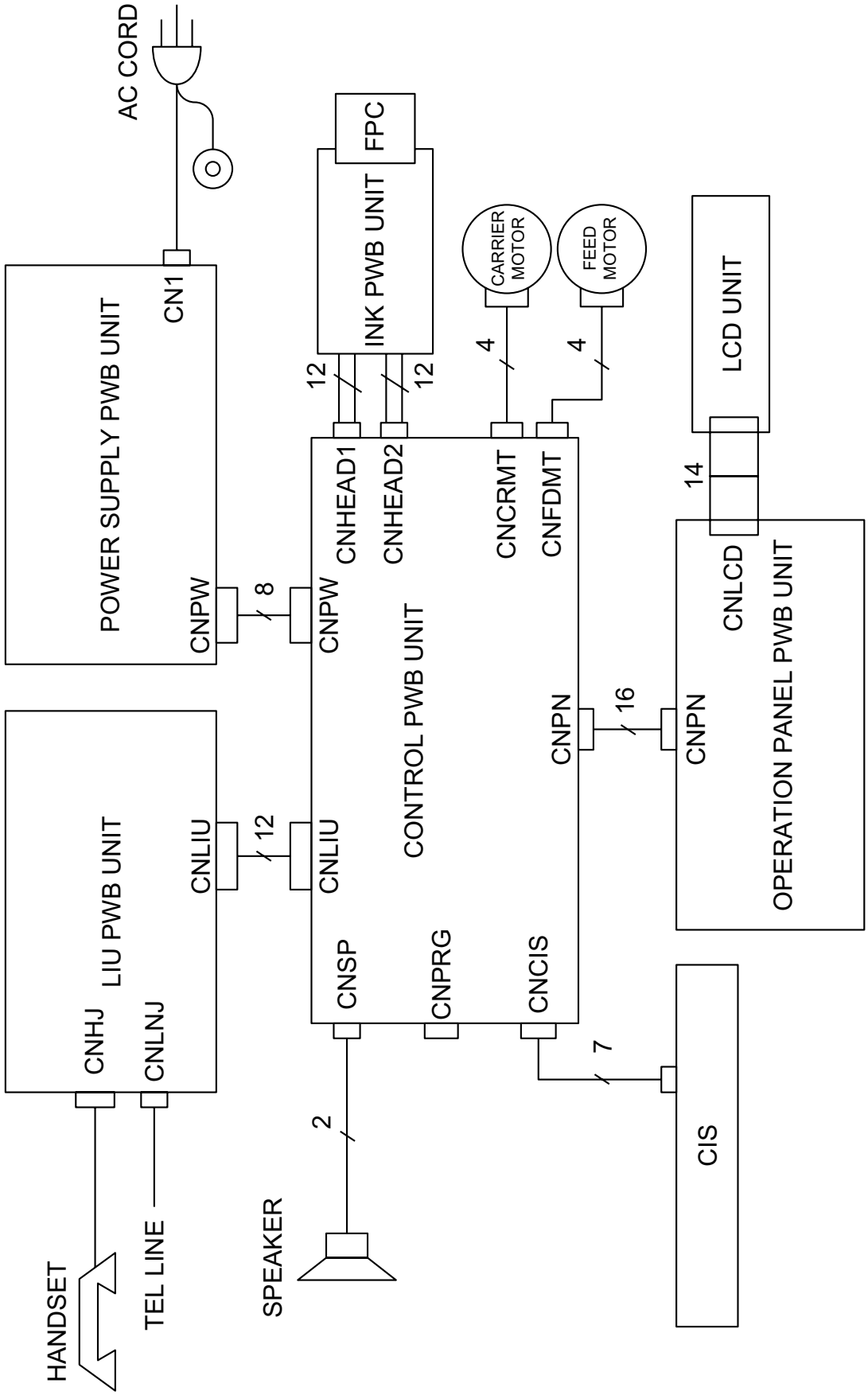
Fig.4

CHAPTER 4. DIAGRAMS

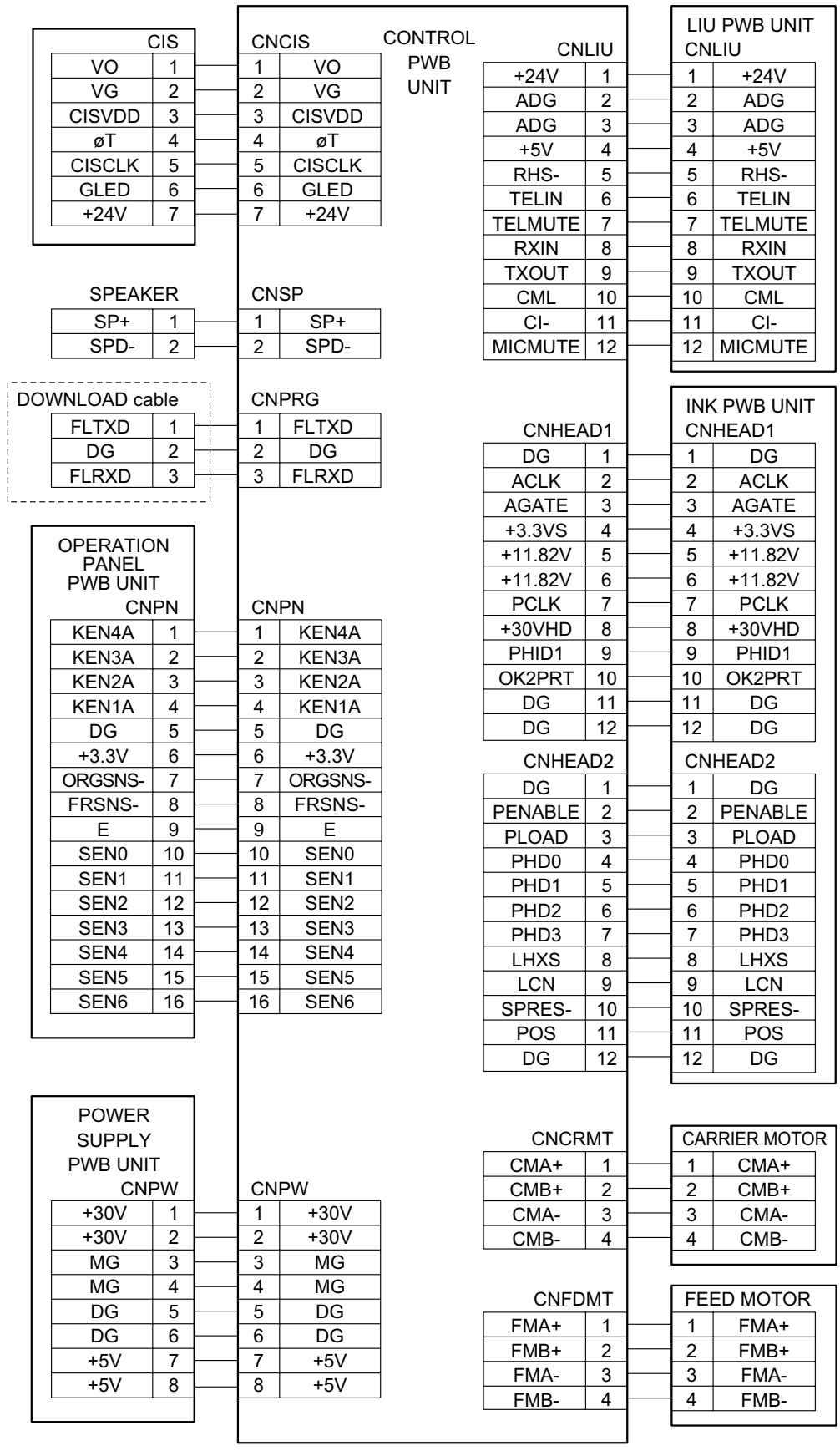
[1] Block diagram



[2] Wiring diagram



[3] Point-to-point diagram



CHAPTER 5. CIRCUIT DESCRIPTION

[1] Circuit description

1. General description

The compact design of the control PWB is obtained by using CONEXANT fax engine in the main control section and high density printing of surface mounting parts. Each PWB is independent according to its function as shown in Fig. 1.

2. PWB configuration

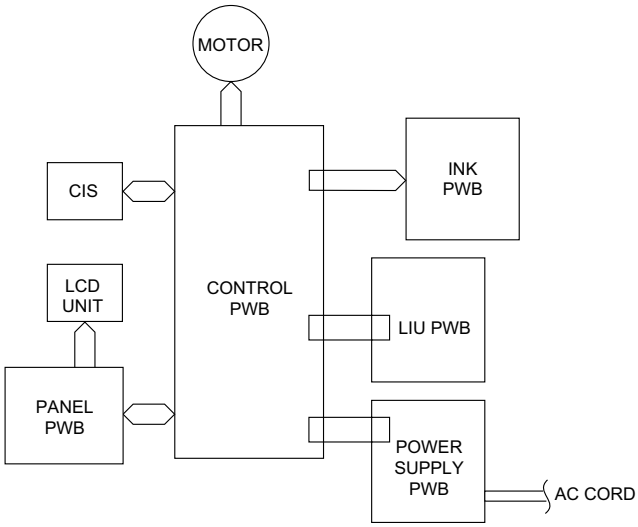


Fig.1

2.1. Control PWB

The Control PWB controls peripheral PWBs, mechanical parts, transmission, and performs overall control of the unit. This machine employs a 1-chip modem (SCE209L) which is installed on the Control PWB.

2.2. LIU PWB

This PWB controls connection of the two telephone lines to the unit.

2.3. Power supply PWB

This PWB provides voltages of +5V and +30V to the other PWBs.

2.4. Panel PWB

The panel PWB allows input of the operation keys.

2.5. LCD UNIT

This unit controls the LCD display.

2.6. Ink PWB

This PWB controls the Ink cartridge.

3. Operational description

Operational descriptions are given below:

- Transmission operation

  When a document is loaded in stand-by mode, the state of the document sensor is sensed via the 1 chip fax engine (SCE209L). With depression of the START key in the off-hook state, transmission takes place. Then, the procedure is sent out from the modem and the motor is rotated to move the document down to the scan line. In the scan processor, the signal scanned by the CIS is sent to the internal image processor and the AD converter to convert the analog signal into binary data. This binary data is transferred from the scan processor to the image buffer within the RAM and encoded and stored in the transmit buffer of the RAM. The data is then converted from parallel to serial form by the modem where the serial data is modulated and sent onto the line.

- Receive operation

  There are two ways of starting reception, manual and automatic. Depression of the START key in the off-hook mode in the case of manual receive mode, or CI signal detection by the LIU in the automatic receive mode. First, the SCE209L controls the procedure signals from the modem to be ready to receive data. When the program goes into phase C, the serial data from the modem is converted to parallel form in the modem interface of the 1 chip fax engine (SCE209L) which is stored in the receive buffer of the RAM. The data in the receive buffer is decoded software-wise to reproduce it as binary image data in the image buffer. The data is sent to ASIC by serial data. ASIC controls printing system.

- Copy operation

  To make a copy on this facsimile, the COPY key is pressed when the machine is in stand-by with a document on the document table and the telephone set is in the on-hook state. First, depression of the COPY key advances the document to the scan line. Similar to the transmitting operation, the image signal from the CIS is converted to a binary signal in the DMA mode via the 1 chip fax engine (SCE209L) which is then sent to the image buffer of the RAM. Next, the data is transferred to ASIC and modify the data to send to Spitfire (Ink PWB) ASIC controls Feed Motor and Carrier Motor.

[2] Circuit description of control PWB

1. General description

Fig. 2 shows the functional blocks of the control PWB, which is composed of 5 blocks.

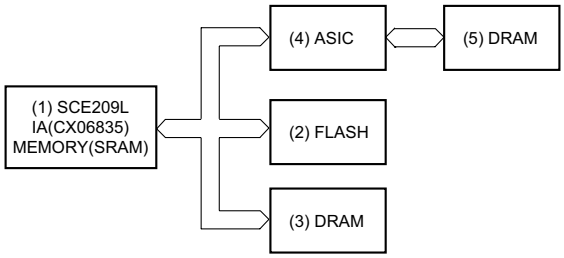


Fig. 2 Control PWB functional block diagram

2. Description of each block

2.1. Main control block

The main control block is composed of CONEXANT 1 chip fax engine (SCE209L), FLASH (4Mbit), DRAM (16Mbit), ASIC (μPD65945).

Devices are connected to the bus to control the whole unit.

2.1.1 SCE209L (IC5): pin-176 QFP (FAX CONTROLLER)

1 chip fax engine has Internal Integrated Analog (CX06835) and Internal memory (SRAM : 32kbit).

2.1.2 PMC39LV040 (IC7): pin-32 TSOP (FLASH)

FLASH of 4Mbit equipped with software for the main CPU.

2.1.3 MSM51V4800E (IC1): pin-28 SOJ (DRAM)

- Image memory for recording process.
- Memory for recording pixel data without paper.
- Memory for system work and ECM receive buffer.

2.1.4 μPD65945 (IC4): pin-144 TSOP (ASIC)

ASIC between SCE209L and SPITFIRE.

It converts the resolution and the aspect ratio of the serial scanning data sent by SCE209L and sends the converted data to Spitfire by parallel IF.

2.1.5 M12L16161A-7TG (IC3): pin-28 SOJ (DRAM)

Dedicated image buffer for ASIC (IC4).

2.2. IC5 (SCE209L) Hardware description

2.2.1 Integrated Controller (SCC)

The Controller contains an internal MC24 Processor with a 16-MB address space and dedicated circuitry optimized for facsimile image processing and monitoring and for thermal or thermal transfer printer support. The CPU provides fast instruction (up to 10 MHz clock speed) execution and memory efficient input/output bit manipulation. The CPU connects to other internal functions over an 8-bit data bus and 24-bit address bus and dedicated control lines. The 24-bit external address bus, 8-bit data bus, control, status and decoded chip select signals support connection to external DRAM and FLASH memory.

2.2.2 DRAM Controller

The CX06835 includes a DRAM controller with signal and page mode access support which supports fast, normal, or slow refresh time. DRAM memory space is provided in one block up to 4 MB. A maximum of 4 MB of DRAM is supported. This space has a programmable size and starting address. Refresh is performed automatically and is supported in stand-by mode. CAS and RAS signal support is provided for one-DRAM banks for both 4-bit and 8-bit organizations. Access speeds from 50ns to 70ns can be supported.

2.2.3 DMA Channels

Six internal DMA channels support memory access for scanner, T.4/T.6, and resolution conversion. DMA Channel 2 can be reprogrammed for external access to thermal printing, thermal transfer, or plain paper inkjet printing.

2.2.4 External RAM and ROM

Moveable and programmable size external SRAM memory of up to 1 MB, DRAM memory of up to 4 MB, and ROM of up to 2 MB can be directly connected to the SCE209L. By using an external address decoder, the size of SRAM and/or ROM can be extended. The ROM stores all the program object code.

2.2.5 Flash Memory Controller

The SCE209L includes a flash memory controller that supports NOR, NAND, and Serial NAND-type flash memory. The supported size of NOR-type memory is up to 1 MB and the supported size of NAND-type memory is unlimited.

2.2.6 Stepper Motor Control

Eight outputs are provided to external current drivers: four to the scanner motor and four to the printer motor. The stepping patterns are programmable and selectable line times are supported. A time out circuit controls the power control of the motors. The printer or scanner motor outputs can be programmed as GPOs for applications using single motor or paper printers.

2.2.7 T.4/T.6 Compression/Decompression

MH, MR and MMR compression and decompression are provided in hardware. T.4 line lengths of up to 8192 pixels are supported. MMR and Alternating Compression/Decompression (ACD) on a line by line basis provide support for up to three independent compression and decompression processes.

2.2.8 Bi-level Resolution Conversion

One independent programmable bi-level 1D-resolution conversion block is provided to perform expansion or reduction on the T.4 decompressed data and scan image data. Image expansion can be programmed up to 200% and reduction down to 33%. Vertical line O-Ring and data output bit order reversal is also provided.

2.2.9 Printer IF

The Printer Interface provides a standard connection between the SCE209L and a thermal printhead to support thermal printing or thermal transfer. The thermal printer interface consists of programmable data, latch, clock, and up to four strobe signals. Programmable timing supports traditional thermal printers, as well as the latchless split mode printers, and line lengths of up to 2048 pixels. Line times from 5 ms to 40 ms are supported. The SCE209L includes a thermal ADC (TADC) function utilizing a D/A converter and a comparator to monitor the printhead temperature. External terminating resistors must be supplied; the values are determined by the specific printhead selected. As an option, plain paper inkjet printing can be supported.

2.2.10 Scanner and Video Control

Five programmable control and timing signals support common CCD and CIS scanners. The video control function provides signals for controlling the scanner and for processing its video output. Three programmable control signals (START, CLK1n, and CLK2) provide timing related to line and pixel timing. These are programmable with regard to start time, relative delay and pulse width. Two video control output signals (VIDCTL[1:0]) provide digital control for external signal preprocessing circuitry. These signals provide a per pixel period, or per line period, timing with programmable polarity control for each signal.

2.2.11 Video Processing

The CX06835 supports two modes of shading correction for scanner data non-uniformity arising from uneven sensor output or uneven illumination. Corrections are provided on either an 8-pixel group or are applied separately to each pixel. Dark level correction and gamma correction are also provided. Two-dimensional Error Diffusion/Dithering is performed on halftone images. The CX06835 includes an 8 x 8 dither table, which is programmable and stored internally (8-bit per table entry). The table is arranged in a matrix of 8 rows by 8 columns. The video processing circuit provides mixed-mode detection/processing and multi-level Resolution Conversion for the scanner multi-level data. The conversion ratio of the multi-level Resolution Conversion is fixed to B4-A4 conversion.

2.2.12 Operator Panel Interface

Operation Panel functions are supported by the operator output bus OPO[6:0], the operator input bus OP[3:0], and two control outputs (LCDCS and LEDCTRL). The CX06835 can directly interface to a 28-key keypad. A 2-line LCD display module with 20 characters per line can be supported.

2.2.13 Synchronous Serial Interface (SSIF)

One or optionally two Synchronous only Serial Interfaces (SSIF) are built into the CX06835, which allows it to communicate with external peripherals. Each SSIF provides separate signals for Data (SSTXD, SSRXD), Clock (SSCLK), and Status (SSSTAT). Each SSIF is a duplex, three-wire system. The SSIF may be configured to operate as either a master or a slave interface. The bit rate, clock polarity, clock phase, and data shifting order are programmable.

2.2.14 Synchronous/Asynchronous Serial Interface (SASIF)

One or optionally two Synchronous/Asynchronous Serial Interface (SASIF) performs the following:

- Serial-parallel conversion of data received from a peripheral device.
- Parallel-to-serial conversion of data for transmission to a peripheral device.

This interface consists of serial transmit data (SASTXD), serial receive data (SASRXD), and a serial clock(SASCLK). The SASIF includes a programmable bit rate generator for asynchronous and synchronous operations. The data shifting order, data bit number, and the SASCLK polarity are programmable. The optional SASIF 2 has an additional pin called DSS_AVAIL. This signal can be used to tristate the SASCLK2 and SASTXD2 signals.

2.2.15 Real Time Clock (RTC)

The CX06835 includes a battery backup real time clock. The RTC will automatically maintain the proper date and time for 32 years. Leap year compensation is included. A 32.768 kHz or 65.536 kHz crystal is required by the RTC.

2.2.16 Tone Generator (ALT_TONE)

The CX06835 provides a programmable tone generator output. The frequency of the tone generator is programmable from 400 Hz to 4 kHz. By using a PWM programmable high frequency as a modulation frequency, the output level can be made programmable.

2.2.17 Watchdog Timer

The Programmable Watchdog Timer is intended to guard against firmware lockup on the part of either executive-controlled background tasks or interrupt-driven tasks, and can only be enabled by a sequence of events under control of the Watchdog Control Logic. Once the Watchdog Timer has been enabled, it can not be disabled unless a system reset occurs.

2.2.18 Reset and Power Control

The RESETn I/O pin provides an internally generated reset output to external circuits, or it can accept an externally generated reset signal. This reset signal will not reset the RTC. Separate RTC battery power inputs are provided for battery-backup functions. A BATRSTn pin is provided, which resets the RTC circuits and other SCC circuits.

2.2.19 Power Up/Down Control

Power Up/Down detection is provided internally. The threshold voltages are:

- Power Up detection level = 2.83V to 2.95V.

An internally generated power down signal controls internal switching between primary and battery power. This control signal is also provided as an output on the PWRDWNn pin. An externally generated power down detector (optional) can be provided as an input on the PWRDWNn pin by setting the INTPWRDWNEn pin.

2.2.20 Stand-by and Sleep Modes

Two power saving modes are provided to reduce the power consumption. In stand-by mode, the CPU is functional, but the modem clock is turned off to save power. When this occurs, the modem may be activated by software under different conditions. In sleep mode, the clock is cut off from both the modem and the CPU to increase the power savings.

The system can be activated by paper insertion, key pressing events, and telephone ring detection.

2.2.21 Embedded Modem DSP

The embedded modem DSP is a synchronous 9600 bps half-duplex modem with error detection and DTMF generation/reception. It provides data transmission/reception from regular PSTN lines, PBX, or private lines. The modem can operate at any standard V.29 data speed up to 9600 bps as well as in V.21 and V.23 modes. The modem is designed for use in Group 3 facsimile machines. It satisfies the requirements specified in ITU-T recommendations V.29, V.27ter, V.21 Channel 2, and T.4 , and meets the signaling requirements of T.30. It also performs HDLC framing according to T.30 at all speeds.

NOTE: For technical details, refer to the FM209/FM214 Designer's Guide, (document 1175).

2.2.22 Software and Firmware Support Features

Available software and embedded firmware provides the following:

- Modem support for speeds up to 9600 bps.
- ECM under conditional assembly.
- DRAM memory support under conditional assembly.
- MH, MR and MMR support.
- Page memory receiving.
- 5 ms minimum scan line time.
- Conditional Error Diffusion or Dither table (8x8) support.
- Dark Level Correction support.
- Single motor support.
- 28-key operator panel support.
- Call progress support for Europe and U.S.A.
- Monochrome inkjet print engine support.

SCE209L (IC5) Terminal descriptions

Pin No.	Pin List	I/O	Input Type	Output Type	Pin Description
1	VDDPLL	—	—	—	PLL Power
2	VSSPLL	—	—	—	PLL GND
3	ROMCSn	—	—	13Xs	—
4	SYNC/GPO[20]	O	—	13Xs	—
5	WRn	O	—	13Xs	—
6	RDn	O	—	13Xs	—
7	DEBUGn	I	Hu	—	—
8	TSTCLK	O	—	13Xs	—
9	VSS	—	—	—	Digital GND
10	SXIN	I	Osc0	—	—
11	SXOUT	O	—	Osc0	—
12	OPO[0]/GPO[8]/SMPWRCTRL	O	—	13Xs	—
13	OPO[1]/GPO[9]/PMPWRCTRL	O	—	13Xs	—
14	OPO[2]/GPO[10]/RINGER	OZ	—	13Xs	—
15	OPO[3]/GPO[11]	O	—	13Xs	—
16	OPO[4]/GPO[12]/SSTXD1	O	—	13Xs	—
17	OPO[5]/GPO[13]	O	—	13Xs	—
18	OPO[6]/GPO[14]	O	—	13Xs	—
19	OPI[0]/GPIO[21]/SSRXD1	I/O	Hu	13Xs	—
20	OPI[1]/GPIO[22]/SSSTAT1	I/O	Hu	13Xs	—
21	OPI[2]/GPIO[23]/SSCLK1	I/O	Hu	13Xs	—
22	OPI[3]/GPIO[24]	I/O	Hu	13Xs	—
23	LCDCS/GPO[17]	O	—	1XC	—
24	VDD	—	—	—	Digital Power
25	RASn	O	—	13Xs	—
26	CAS[0]n	O	—	13Xs	—
27	DWRn	O	—	13Xs	—
28	VBAT	—	—	—	RTC Battery Power
29	XIN	I	Osc1	—	—
30	XOUT	O	—	Osc1	—
31	WRPROTn	O	—	1XC	—
32	TEST[1]	I	Hd	—	—
33	TEST[0]	I	Hd	—	—
34	BATRTSn	I	H	—	—
35	INTPWRDWNEn	I	H	—	—
36	PWRDWNn	I/O	H	13Xs	—
37	N.C.	—	—	—	—
38	ADGA	—	VADG	—	PADC Analog GND
39	VREFn/CLREF	I	VR-	—	PADC
40	VIN	I	VA	—	PADC
41	ADGA	—	VADG	—	PADC Analog GND
42	ADVA	—	VADV	—	PADC Analog Power
43	ADXG	—	VXG	—	PADC
44	VREFp	I	VR	—	PADC
45	VSS	—	—	—	VSS Digital GND
46	IVREFn	O	—	VR-	PADC
47	IVREFp	O	—	VR+	PADC
48	VDD	—	—	—	Digital Power
49	THADI	I	Analog	—	TADC
50	VSS	—	—	—	Digital GND
51	GPIO[17]/DSPIRQn	I/O	Hu	13Xs	—
52	GPIO[16]/IRQ[8]	I/O	Hu	13Xs	—
53	GPIO[15]/CS[5]n	I/O	Hu	13Xs	—
54	GPIO[13]/CS[3]n	I/O	Hu	13Xs	—
55	GPIO[37]/IRQ15n/DSPCSn	I	Hu	13Xs	—
56	GPIO[4]/CPCIN/TPHPWRCTRL/DMAREG	I/O	Hu	13Xs	—
57	STRB[0]	O	—	1XC	—
58	STRB[1]	O	—	1XC	—
59	STRB[2]	O	—	1XC	—
60	STRB[3]	O	—	1XC	—
61	PLAT	O	—	3XC	—
62	PDAT	O	—	2XC	—

SCE209L (IC5) Terminal descriptions

Pin No.	Pin List	I/O	Input Type	Output Type	Pin Description
63	PCLK/DMAACK	O	—	3XC	—
64	VDD	—	—	—	Digital Power
65	GPIO[11]/BE/SERINP/SR4IN	I/O	Hu	13Xs	—
66	GPIO[19]/RDY/SEROUT	I/O	Hu	13Xs	—
67	START	O	—	2XC	—
68	CLK1n/GPO[25]	O	—	13Xs	—
69	CLK2/GPO[24]	O	—	13Xs	—
70	GND	—	—	—	IA GND
71	MCLK	ID	—	—	Main Clock from DSP
72	CTRLI	ID	d	—	Control Data from DSP
73	TESTC	ID	d	—	IA Test
74	SOUT	OD	—	T	Serial Data to DSP
75	SIN	ID	d	—	Serial Data to DSP
76	FSYNC	I/OD	d	—	Frame Sync Signal (IA)
77	POR	IA	d	—	Hardware Reset
78	GND	—	—	—	IA GND
79	LINE_INP	IA	—	—	Analog Input to Line Pre-Amp.
80	MIC_INP	IA	—	—	Positive differential Analog Input to Microphone Pre-Amp.
81	MIC_INM	IA	—	—	Negative differential Analog Input to Microphone Pre-Amp.
82	MIC_BIAS	OA	—	—	2.2 V Nominal DC Bias Source for Electret Microphone
83	BG	OA	—	—	Analog reference Voltage Output
84	VC	OA	—	—	Analog Ground Bias Output
85	AVDD	PWR	—	—	IA Analog Power
86	GND	—	—	—	IA GND
87	LINE_OUTP	OA	—	—	Line Driver Output
88	SPKR_OUTP	OA	—	—	Positive Speaker Driver Output
89	SPKR_OUTM	OA	—	—	Negative Speaker Driver Output
90	DVDD	PWD	—	—	IA Digital Power
91	MODE_0	ID	u	—	Connect to VSS (IA Mode Selection)
92	ICLK	I/OD	—	—	IA Bit Clock Input/Output
93	VSS	—	—	—	VSS Digital GND
94	FCSn[1]/VIDCTL[0]/GPO[23]	O	—	13Xs	—
95	IARESET	O	—	13Xs	DSP to EXTIA POR
96	IACLK	O	—	13Xs	DSP to EXTIA MCLK
97	VDD	—	—	—	Digital Power
98	IA1CLK	I	H	—	DSP from EXTIA ICLK
99	SR3IN/DSPIRQn	I	H	—	DSP from primary EXTIA SOUT/EXT. Modem IRQn
100	SR4OUT	O	—	13Xs	DSP to primary EXTIA SIN
101	SR1IO	O	—	13Xs	DSP to EXTIA CTRL1
102	SA1CLK	I	H	—	DSP from EXTIA FSYNC
103	GPIO[7]/SSRXD2/SASRXD2	I/O	Hu	13Xs	—
104	GPIO[6]/SSTXD2/SASTXD2	I/O	Hu	13Xs	—
105	GPIO[5]/SSCLK2/SASCLK2	I/O	Hu	13Xs	—
106	GPIO[10]/SSSTAT2/DSS_AVAIL	I/O	Hu	13Xs	—
107	VSS	—	—	—	Digital GND
108	RESETn	I/O	Hu	2XC	—
109	GPIO[3]/SASCLK	I/O	Hu	13Xs	—
110	GPIO[2]/SASRXD	I/O	Hu	13Xs	—
111	GPIO[1]/SASTXD	I/O	Hu	13Xs	—
112	GPIO[9]/FRDn	I/O	Hu	13Xs	—
113	GPIO[8]/FWRn	I/O	Hu	13Xs	—
114	A[0]	I/O	Tu	13Xs	CPU Address Bus
115	A[1]	I/O	Tu	13Xs	CPU Address Bus
116	A[2]	I/O	Tu	13Xs	CPU Address Bus
117	A[3]	I/O	Tu	13Xs	CPU Address Bus
118	A[4]	I/O	Tu	13Xs	CPU Address Bus
119	VDD	—	—	—	Digital power
120	A[5]	I/O	Tu	13Xs	CPU Address Bus
121	A[6]	I/O	Tu	13Xs	CPU Address Bus
122	A[7]	I/O	Tu	13Xs	CPU Address Bus
123	A[8]	I/O	Tu	13Xs	CPU Address Bus
124	A[9]	I/O	Tu	13Xs	CPU Address Bus

SCE209L (IC5) Terminal descriptions

Pin No.	Pin List	I/O	Input Type	Output Type	Pin Description
125	A[10]	I/O	Tu	13Xs	CPU Address Bus
126	A[11]	I/O	Tu	13Xs	CPU Address Bus
127	A[12]	I/O	Tu	13Xs	CPU Address Bus
128	A[13]	I/O	Tu	13Xs	CPU Address Bus
129	A[14]	I/O	Tu	13Xs	CPU Address Bus
130	A[15]	I/O	Tu	13Xs	CPU Address Bus
131	A[16]	I/O	Tu	13Xs	CPU Address Bus
132	VDD	—	—	—	Digital Power
133	VSS	—	—	—	Digital GND
134	A[17]	I/O	Tu	13Xs	CPU Address Bus
135	A[18]	I/O	Tu	13Xs	CPU Address Bus
136	A[19]	I/O	Tu	13Xs	CPU Address Bus
137	A[20]	I/O	Tu	13Xs	CPU Address Bus
138	A[21]/EYECLK	I/O	Tu	13Xs	CPU Address Bus
139	A[22]/EYESYNC	I/O	Tu	13Xs	CPU Address Bus
140	A[23]/EYEXY	I/O	Tu	13Xs	CPU Address Bus
141	D[0]	I/O	Tu	13Xs	CPU Data Bus
142	D[1]	I/O	Tu	13Xs	CPU Data Bus
143	D[2]	I/O	Tu	13Xs	CPU Data Bus
144	D[3]	I/O	Tu	13Xs	CPU Data Bus
145	D[4]	I/O	Tu	13Xs	CPU Data Bus
146	D[5]	I/O	Tu	13Xs	CPU Data Bus
147	D[6]	I/O	Tu	13Xs	CPU Data Bus
148	D[7]	I/O	Tu	13Xs	CPU Data Bus
149	GPIO[20]/ALTTONE	I/O	Hu	13Xs	—
150	GPIO[26]	I/O	Hu	13Xs	—
151	GPIO[27]	I/O	Hu	13Xs	—
152	GPIO[28]	I/O	Hu	13Xs	—
153	GPO[26]	O	—	13Xs	—
154	GPO[27]	O	—	13Xs	—
155	GPO[28]	O	—	13Xs	—
156	GPO[29]	O	—	13Xs	—
157	GPO[30]/SR3OUT	O	—	13Xs	—
158	GPIO[29]	I/O	Hu	13Xs	—
159	GPIO[31]	I/O	Hu	13Xs	—
160	GPIO[32]	I/O	Hu	13Xs	—
161	VDD	—	—	—	Digital power
162	GPIO[34]	I/O	Hu	13Xs	—
163	GPIO[35]	I/O	Hu	13Xs	—
164	GPIO[36]	I/O	Hu	13Xs	—
165	Vss	—	—	—	Digital GND
166	VDD	—	—	—	Digital Power
167	PM[0]/GPO[0]	O	—	13Xs	—
168	PM[1]/GPO[1]	O	—	13Xs	—
169	PM[2]/GPO[2]	O	—	13Xs	—
170	PM[3]/GPO[3]	O	—	13Xs	—
171	SM[0]/GPO[4]	O	—	13Xs	—
172	SM[1]/GPO[5]	O	—	13Xs	—
173	SM[2]/GPO[6]	O	—	13Xs	—
174	SM[3]/GPO[7]	O	—	13Xs	—
175	REGDMA/GPO[18]/CLKDIV[0]	I/O	T	13Xs	—
176	WAITn/GPO[19]/CLKDIV[1]	I/O	T	13Xs	—

2.3. Panel control block

The following controls are performed by the SCE209L.

- Operation panel key scanning
- Operation panel LCD display

2.4. Mechanism/recording control block

- Recording control block diagram

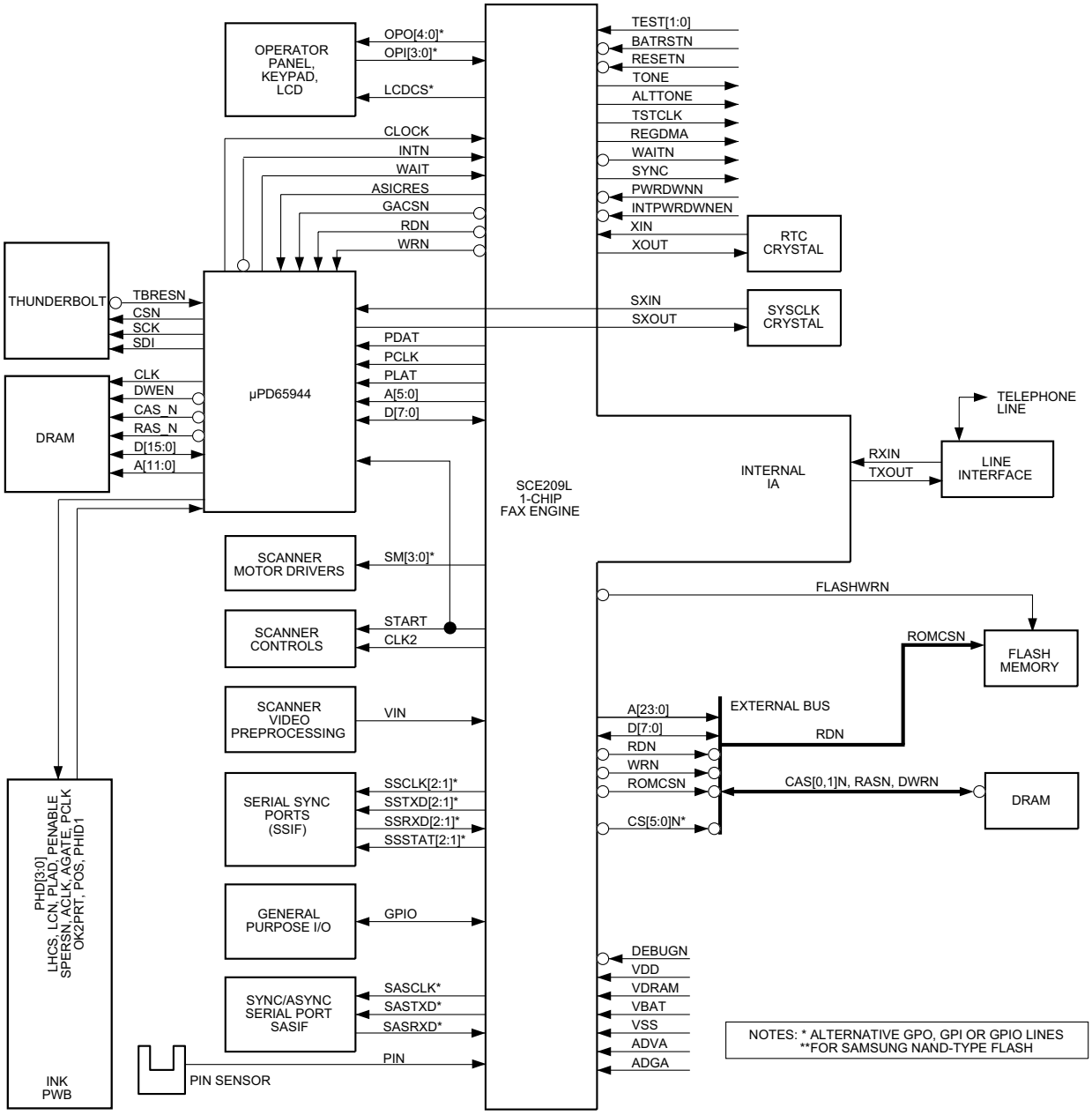


Fig. 3

2.5. Modem block (CX06835)

2.5.1 Integrated Analog Control Resisters for CX06835

The CX06835 IA can be used as a Primary Integrated Analog (PIA) codec or as a Secondary Integrated Analog (SIA) codec, depending on the signal connection with the SCE Controller ASIC device. In the SCE100 product, both the PIA and the SIA are packaged external to the SCE Controller device, whereas in the SCE209, the PIA is packaged with the SCE209 Controller and the SIA is external.

The CX06835 IA provides gain, filtering, internal analog switching, and an internally sourced microphone bias output. The IA is controlled by three control registers and an address register located in internal RAM space which are accessed via the modem interface memory. These registers provide individual controls for the IA's inputs, outputs, gain settings, and switching.

The registers are located in internal DSP RAM. Each bit of each 8-bit IA control register has exactly the same meaning for the PIA and the SIA. The LSB of each 16-bit address contents is used to control the PIA. The MSB of each 16-bit address contents is used to control the SIA.

The following table the PIA/SIA control register RAM access code.

Register	SBRAMx	BRx	Crx	IOx	AREXx	ADDx	PIA Reg*	SIA Reg*
IACR1	0	0	0	0	0	D0	0	1
IACR2	0	0	0	0	0	D4	0	1
IACR3	0	0	0	0	0	D5	0	1
IAADD	0	0	0	0	0	CE	0, 1	0, 1
NOTES: *Registers to use when x=1. When x=2, add 10h.								

- For changes made to IACR1 to be effective, the host must write to IAADD with a value of 0002h.
- For changes made to IACR2 to be effective, the host must write to IAADD with a value of 0006h.
- For changes made to IACR3 to be effective, the host must write to IAADD with a value of 0007h.

Configuration default values are shown below.

DEFAULT VALUE			
CONFIGURATION	**IACR1**	**IACR2**	**IACR3**
V.17/V.33	1D9Eh	0008h	0000h
V.29	1D9Eh	0008h	0000h
V.27ter	1D9Eh	0008h	0000h
V.21 Ch. 2	1D9Eh	0008h	0000h
V.23/Caller ID	1D9Eh	0008h	0000h
Tone Transmit/Detect	1D9Eh	0008h	0000h
Voice/Audio Codec	0D16h	0008h	0000h
Speakerphone	0D16h	0008h	0000h

The following signal flow block diagram is for a signal IA and it applies to both PIA and SIA.

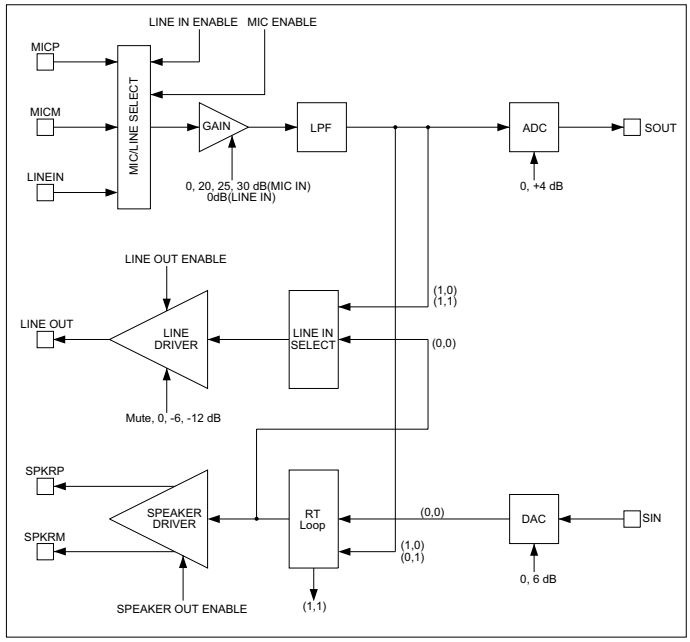


Fig. 4 PIA/SIA Signal Flow Control

2.6. IC4 (μPD65945) Hardware description

2.6.1 Entire Mechanism Sequence Controller

Depending on data processing of the entire ASIC, this controller manages the following automatic drive sequences:

- Power-on/reset sequence
- CAP position check sequence
- CAP position movement sequence 1
- CAP position movement sequence 2
- Cartridge replacement sequence 1 (movement to replacement position)
- Cartridge replacement sequence 2 (return to the CAP position)
- Print sequence
- Next page print sequence
- Head failure check sequence
- Cartridge ID check sequence

When Fax Engine sends a motor drive command, this controller activates the motor control circuit after automatic drive sequences to control the motor.

2.6.2 Serial Data Receiving Circuit

This circuit stores received serial print data in the input buffer. It receives data (PDAT) using a 16-bit shift register when the clock (PCLK) is activated and then writes the data to the buffer by every 16 dots (2 bytes).

Input data is fixed to 216 bytes (1728 dots) per line, and the maximum serial transfer frequency is 3.3 MHz.

When Fax Engine sends a page break command (Page End register = 1), this circuit adds Flag Word (data indicating the last line of a page) after to the last piece of data.

2.6.3 Input Buffer

This buffer uses 384 kWord of memory space for receiving serial data. It is based on a FIFO system and equipped with an address counter.

This buffer also has a determining circuit to show the FIFO status (FULL, NEARFULL or EMPTY).

2.6.4 Enlargement/Reduction/Resolution Conversion Circuit

This circuit reads data from the input buffer and enlarges or reduces image data dot by dot. Based on SHARP's conversion algorithm (oversampling technique), this process has made it possible to enlarge/reduce the length and width individually with the following register setting: horizontal scanning direction KH (15:0) and vertical scanning direction KV (16:0).

Along the horizontal scanning direction, this circuit removes right and left dots after enlargement, and fills right and left space with white dots after reduction to send the center of images (centering).

After conversion, there are 4800 dots (fixed value) along the horizontal scanning direction. 16 extra white dots are inserted at the right and left edges for 16-dot long odd and even nozzles of the cartridge head. In total, 4832 dots are sent per line.

To make voids (margins) at the right and left edges, this circuit masks dots on both sides individually (in white) according to the register setting from Fax Engine (maximum dots: 255 on the left, and 511 on the right). After converted in both scanning directions, image data is stored in the print buffer. When converting a swath of data, this circuit sends a notification to the entire mechanism sequence controller. It identifies Flag Word (indicating a page break) on each line. If some sections have less than a swath (208 lines) of data on the last page, this circuit fills them with white dots.

In the ink save mode, output data is equivalent to 300 dpi of the vertical scanning.

2.6.5 Split Printing/White Skip Measuring Circuit

This circuit monitors data which is converted by the enlargement/reduction/resolution conversion circuit to be written to the print buffer to calculate the number of print dots. 4800 dots for horizontal scanning are divided into 8 areas (600 dots per each) and the calculation is made for each area.

This circuit sends the split printing status when detecting an area with 62400 (600 x 208 divided by 2) dots or more, and sends the white skip status if there are no dots in any areas.

The status is sent to the enlargement/reduction/resolution conversion circuit and then reflected in Flag Word. This circuit checks Flag Word when starting the swath printing, and performs the split printing or white skip operation accordingly using Spitfire controller or the entire mechanism sequence controller.

2.6.6 Print Buffer

This buffer stores image data which is converted to 600 dpi x 600 dpi by the enlargement/reduction/resolution conversion circuit. This buffer sends a notification to notifies the entire mechanism sequence controller when detecting a swath (208 lines) of data. When the entire mechanism sequence controller sends a release command, this buffer frees memory space for a swath of image data.

2.6.7 Spitfire controller

When the entire mechanism sequence controller sends a print start command, this controller controls Spitfire by reading data dot by dot from the print buffer and converting the length and width according to the head alignment.

When receiving a split printing command, this controller masks odd and even slice data in white to send to the first and second paths respectively.

Also, it counts dots when sending data to Spitfire to calculate the number of dots per swath.

2.6.8 Carriage Motor Control Circuit

This circuit drives the carriage motor by controlling Thunderbolt according to the motor acceleration/deceleration table. The carriage motor drives by steps specified by the entire mechanism sequence controller in the order of "Still", "Acceleration", "Constant", and "Deceleration".

Moreover, the motor drives by specified steps at a constant speed when the home position detection sensor is switched ON/OFF, and then decelerates to stop. The carriage is stopped at a fixed distance after the sensor is switched, which has made it possible to identify its position at the time of initialization.

2.6.9 Feeder Motor Control Circuit

This circuit drives the feeder motor by controlling Thunderbolt according to the motor acceleration/deceleration table. The feeder motor drives by steps specified by the entire mechanism sequence controller in the order of "Still", "Acceleration", "Constant", and "Deceleration".

Moreover, the motor drives by specified steps at a constant speed when the recording paper detection sensor is switched ON/OFF, and then decelerates to stop. The motor is stopped at a fixed distance after the sensor is switched, which has made it possible to locate the beginning of the recording paper.

2.6.10 Thunderbolt Interface Circuit

This circuit receives control signals from the carriage motor control circuit and the feed motor control circuit, and converts them to serial signals to send to the motor driver IC (Thunderbolt).

Using its head power circuit, this circuit controls the head power ON/OFF bit in serial signals (converts to serial signals).

2.6.11 Fax Engine Bus Interface

This interface has a bridging function for connecting the external bus of Fax Engine LSI and the internal bus of ASIC. Due to the system clock condition, 1WAIT or more must be set to activate Fax Engine.

2.6.12 Interrupt Controller

This controller logs major causes of interruption in the ASIC and sends interrupt signals according to the interrupt status of the Fax Engine firmware (allowed or prohibited). The causes can be cleared or stored. External interrupt to Fax Engine is generated at L active level.

2.6.13 Memory Access Arbiter

This arbiter arbitrates memory access from each buffer. There are 7 access channels. The arbitration is controlled by priority to maintain the data transfer rate of the data output channel to the head.

After arbitration, this arbiter notifies the SDRAM controller of memory addresses and access types and then waits until memory access is completed.

2.6.14 SDRAM Controller

This controller accesses the memory by controlling the read cycle, write cycle, and AUTO refresh cycle of a 16-bit wide 16Mbit Synchronous DRAM.

A refresh cycle is automatically inserted by distributed refresh executed every 15.6μs (maximum), and when initialization sequence is performed after reset.

2.6.15 Sensor Detection Circuit

For home position sensor input and paper detection sensor input, this circuit eliminates noises such as chattering. The detection method is based on multiple sampling (sequential matching). The sampling clock is 1.008 MHz and detection time in the register setting should be approximately between 2μs ~ 65 ms, and can be set for the rising edge and the falling edge individually.

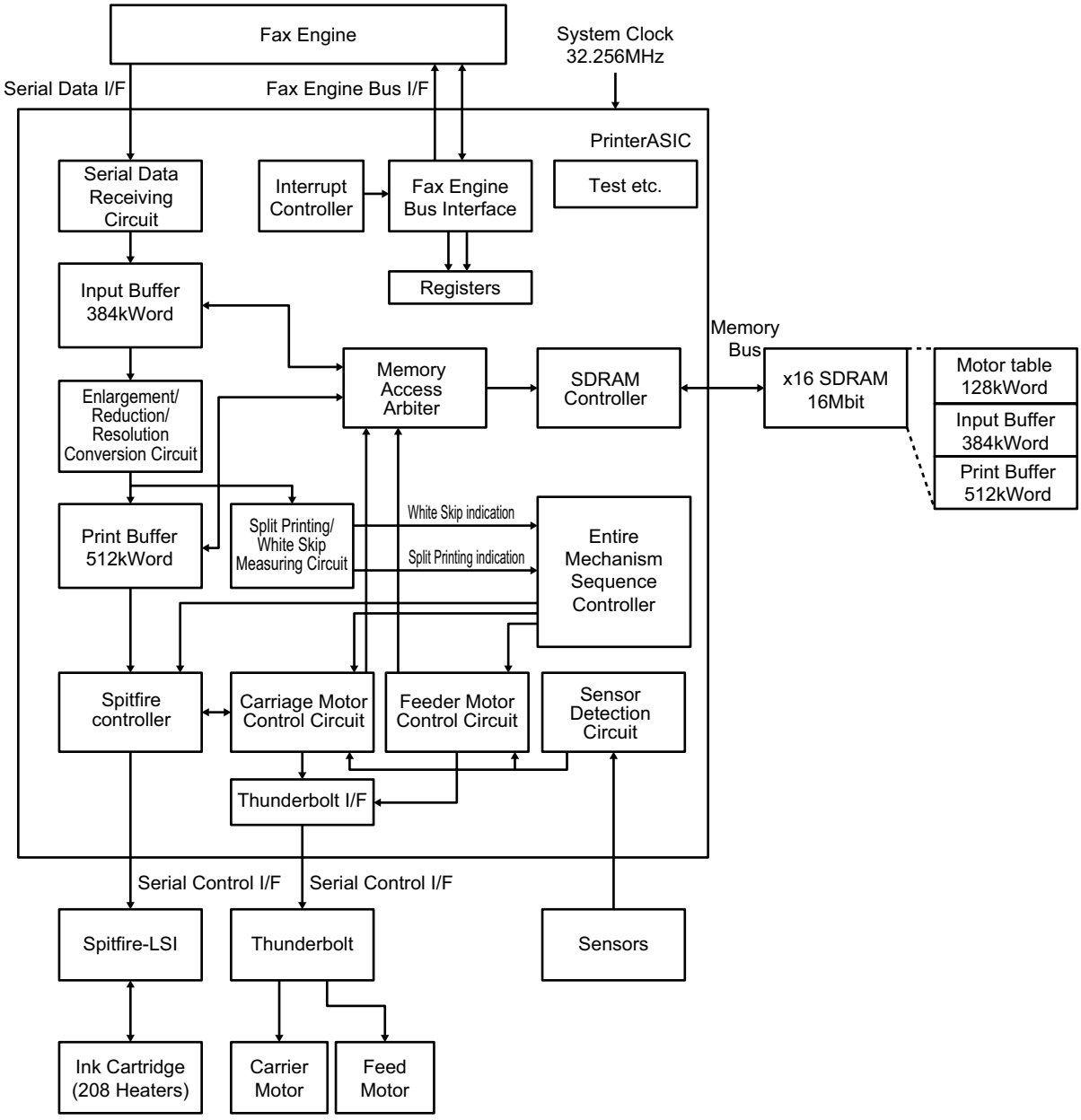


Fig. 5

μPD65945 (IC4) Pin descriptions

SYMBOL	PIN NO.	I/O	DESCRIPTION	PAD CELL.	NOTE
System Operation Signals (3 pin)					
XIN	75	I	X'tal in	OSI1	32.256 MHz
XOUT	74	O	X'tal out	OSO1	
ASICRES	70	I	Reset L: Operate H: Reset	FIS1	Schmitt

SYMBOL	PIN NO.	I/O	DESCRIPTION	PAD CELL.	NOTE
Fax Engine Bus Interface (21 pin)					
SYSCLK	83	O	System clock for Fax Engine	FE04	32.256 MHz Output
A0	104	I	Address bus L: Logic 0 H: Logic 1	FI01	
A1	103	I		FI01	
A2	102	I		FI01	
A3	101	I		FI01	
A4	100	I		FI01	
A5	99	I		FI01	
D0	95	I/O	Data bus L: Logic 0 H: Logic 1	B00C	
D1	94	I/O		B00C	
D2	93	I/O		B00C	
D3	92	I/O		B00C	
D4	91	I/O		B00C	
D5	90	I/O		B00C	
D6	89	I/O		B00C	
D7	88	I/O		B00C	
CS_N	68	I	Chip select L: Select H: Deselect	FI01	Schmitt
RD_N	106	I	Read strobe L: Read	FI01	Schmitt
WR_N	107	I	Write strobe L: Write	FI01	Schmitt
INT_N	67	O	Interrupt L: Interrupt Hi-Z: No Interrupt	EXTH	Open Drain
RDY	61	O	External Wait L: Wait Hi-Z: Ready	EXTH	Open Drain
SCANSYNC	60	I	Scanner Motor Sync. Signal Rise: Sync.	FISI	Schmitt

SYMBOL	PIN NO.	I/O	DESCRIPTION	PAD CELL.	NOTE
Thunderbolt Control Interfaces (4 pin)					
SCS_N	141	O	Chip Select	FO09	
SCLK	142	O	Clock	FO09	
SDAT	140	O	Data	FO09	
SRST_N	133	I	Reset	FISI	Schmitt

SYMBOL	PIN NO.	I/O	DESCRIPTION	PAD CELL.	NOTE
Spitfire Control Signals (14 pin)					
SFRES_N	127	O	Reset	FE04	
ACLK	130	O	A-Line Counter Clock	FE04	
AGATE	129	O	Reset A-Line to Low	FE04	
PLCLK	128	O	Shift Clock for P-Line Data	FE04	
PDATA0	120	O	Serial Data Output#0	FE04	
PDATA1	119	O	Serial Data Output#1	FE04	
PDATA2	118	O	Serial Data Output#2	FE04	
PDATA3	117	O	Serial Data Output#3	FE04	
PLOAD	113	O	Latches into Holding Reg.	FE04	
PENABLE	114	O	Enables P-Line Output Drive	FE04	
LCN	111	O	Latch Control Register	FE04	
LHCS	112	O	Latch Heater States	FE04	
OK2PRT	125	I	P-Line Driver Status	FISI	Schmitt
PHID	126	I	Print Head ID Compare Status	FISI	Schmitt

μPD65945 (IC4) Pin descriptions

SYMBOL	PIN NO.	I/O	DESCRIPTION	PAD CELL.	NOTE
Sensor Signals (2 pin)					
POS	124	I	Home position Sensor Input L: No Position H: Home Position	FIS1	Schmitt
PIN_N	47	I	Paper-in Sensor Input L: Paper Exist H: No Paper	FIS1	Schmitt

SYMBOL	PIN NO.	I/O	DESCRIPTION	PAD CELL.	NOTE
Test Pins (10 pin)					
SCK	136	I	Scan clock	-	
AMC	138	I		-	
SMC	135	I	Scan mode control	-	
SIN	137	I	Scan in	FDS1	
SOT	139	O	Scan out	FO09	
TM0	51	I	Test mode select LLL: Normal operation Else: Test/Debug operations	FDS1	Schmitt+Pull Down
TM1	52	I		FDS1	Schmitt+Pull Down
TM2	53	I		FDS1	Schmitt+Pull Down
TEST	50	I	Test mode enable L: Normal operation H: Test mode	FDS1	Schmitt+Pull Down
DEBUG	54	O	Debug output	FO09	

SYMBOL	PIN NO.	I/O	DESCRIPTION	PAD CELL.	NOTE
Power/Ground Pins (55 pin)					
VDD	1,10,25, 36,56,57, 73,76,79, 80,86,87, 98,108, 121,134	-	Power +3.3V	-	
GND	11,20,21, 23,24,37, 3845,46, 48,49,55, 58,59,62, 63,69,71, 72,77,78, 81,82,84, 85,96,97, 105,109, 110,115, 116,122, 123,131, 132,143, 144	-	Ground	-	

SYMBOL	PIN NO.	I/O	DESCRIPTION	PAD CELL.	NOTE
Serial Data Interface (3 pin)					
PCLK	64	I	Serial clock	FIS1	Schmitt
PDAT	65	I	Serial data L: White Dot H: Black Dot	FIS1	Schmitt
PLAT	66	I	Serial data latch strobe (Negative Pulse)	FIS1	Schmitt

μPD65945 (IC4) Pin descriptions

SYMBOL	PIN NO.	I/O	DESCRIPTION	PAD CELL.	NOTE
SDRAM Bus Interface (33 pin)					
RA0	35	O	Address bus L: Logic-0 H: Logic-1	FO09	
RA1	34	O		FO09	
RA2	33	O		FO09	
RA3	32	O		FO09	
RA4	31	O		FO09	
RA5	30	O		FO09	
RA6	29	O		FO09	
RA7	28	O		FO09	
RA8	27	O		FO09	
RA9	26	O		FO09	
RA10	39	O		FO09	
RB	40	O	Black select L: Bank-0 H: Bank-1	FO09	
RD0	9	I/O	Data bus L: Logic-0 H: Logic-1	B00U	
RD1	8	I/O		B00U	
RD2	7	I/O		B00U	
RD3	6	I/O		B00U	
RD4	5	I/O		B00U	
RD5	4	I/O		B00U	
RD6	3	I/O		B00U	
RD7	2	I/O		B00U	
RD8	19	I/O		B00U	
RD9	18	I/O		B00U	
RD10	17	I/O		B00U	
RD11	16	I/O		B00U	
RD12	15	I/O		B00U	
RD13	14	I/O		B00U	
RD14	13	I/O		B00U	
RD15	12	I/O		B00U	
RCS_N	41	O	Chip select L: Select H: Deselect	FO09	
RRAS_N	42	O	Command/Control L: Active H: In Active	FO09	
RCAS_N	43	O		FO09	
RWE_N	44	O		FO09	
PCLK	22	O	SDRAM operation clock	FE04	32.256 MHz

2.7. IC10 (PLCC44) Hardware description

This specfication describes a multifunction analog ASIC to be used in inkjet printer applications. This ASIC integrates two Switching Voltage Regulator circuits, two motor drive circuits and a Reset circuit in a single IC.

The functions implemented are:

- Two DC-to-DC converters providing the following voltages from an unregulator input of +21 volts to +42 volts DC:
  - VCC Voltage Regulator circuit - A buck type switching regulator using a MOSFET (internal to the ASIC), current sense resistor (internal to the ASIC), Schottky diode (external to the ASIC), external inductor and filter capacitor. This converter shall be programmable to provide either +3.3 volts, +5 volts, +5%/-4%, at a current of 10ma.(min.) to 500 ma.(max./ave.).
  - VPH Voltage Regulator circuit - A buck type switching regulator using a MOSFET (internal to the ASIC), current sense resistor (internal to the ASIC), Schottky diode (external to the ASIC), external inductor and filter capacitor. This converter is to have a programmable output voltage (by means of an external resistor divider network) in the range of +10 volts to +15 volts, +/2% with a VBULK input voltage range of +21 volts to +42 volts. With VPH = +11.75 volts the load current is 10 ma.(min.), 1amp. (max./ave.) with a peak of 1300 ma. (peak/ave.) for 400 ms. The VPH regulator shall have a ENABLE bit in the serial register that allows software to turn on and off this converter.
  - The ENABLE bit when set low shall place this ASIC into its lowest stand-by power mode in order to minimize idle power. The VCC regulator is not effected by ENABLE bit.
- Two Motor Drivers:
  - Both Motor Drivers are to be selectable as EITHER a bidirection DC motor driver with PWM control with peak currents of 2.0 amps and RMS currents of TBD mA or a Bipolar stepper motor driver with current levels (average) of 183 ma., 367 ma. and 550 ma. per phase with quarter step mode capability. In stepper mode both drivers shall be capable of being operated in the quarter step mode.
- nRESET Generation

All ASIC input control lines are to be compatible with CMOS type +3.3 volts and +5 volts logic.

PLCC44 (IC10) Pin descriptions

PIN NO.	PIN NAME	PIN DESCRPTION
1	VCP	(Capacitor VBULK)
2	CP2	(Capacitor to CP1)
3	CP1	(Capacitor to CP2)
4	nRESET	Reset Port
5	VCC	VCC Supply Voltage
6	GND	Substrate Ground
7	GND	Substrate Ground
8	VCC_FB	VCC Regulator Feedback Input
9	MD1_MODE	Mode Select for Motor Driver MD1
10	VCC_SOURCE	Source of internal MOSFET for VCC Regulator
11	VBULK	VBULK Supply Voltage
12	MD2_OUT_A+	MD2-Motor Driver Output a Plus
13	MD_R_SENSE_A	MD2-Output A Current Sense Resistor
14	MD2_OUT_A-	MD2-Motor Driver Output A Minus
15	VBULK	VBULK Supply Voltage
16	VBULK	VBULK Supply Voltage
17	GND	Substrate Ground
18	GND	Substrate Ground
19	MD1_OUT_A+	MD!-MOtor Driver Output A Plus
20	MD1_R_SENSE_A	MD1-Output A Current Sense Resistor
21	MD1_OUT_A-	MD1-Motor Driver Output A Minus
22	MD1_DCM_PWM	MD1_DC Motor Driver PWM Input
23	VBULK	VBULK Supply Voltage
24	MD2_DCM_PWM	MD2-DC Motor Driver PWM Input
25	MD1_OUT_B-	MD1-Motor Driver Output B Minus
26	MD1_R_SENSE_B	MD1-Output B Current Sense
27	MD1_OUT_B+	MD1-Motor Driver Output B Plus
28	GND	Substrate Ground
29	GND	Substrate Ground
30	VBULK	VBULK Supply Voltage
31	VBULK	VBULK Supply Voltage
32	MD2_OUT_B-	MD2-Motor Driver Output B Minus
33	MD2_R_SENSE_B	MD2-Output B Current Sense Resistor
34	MD2_OUT_B+	MD2-Motor Driver Output B Plus
35	VBULK	VBULK Supply Voltage
36	VPH_SOURCE	Source of internal MOSFET for VPH Regulator
37	MD2_MODE	Mode Select for Motor Driver MD2
38	VPH_FB	VPH Regulator Feedback Input
39	GND	Substrate Ground
40	GND	Substrate Ground
41	SDI	Serial Port Data Input
42	SCLK	Serial Port Clock
43	nCS	Serial Port Chip Select
44	AGND	Analog Ground

[3] Circuit description of LIU PWB

1. LIU block operational description

1.1. Block diagram

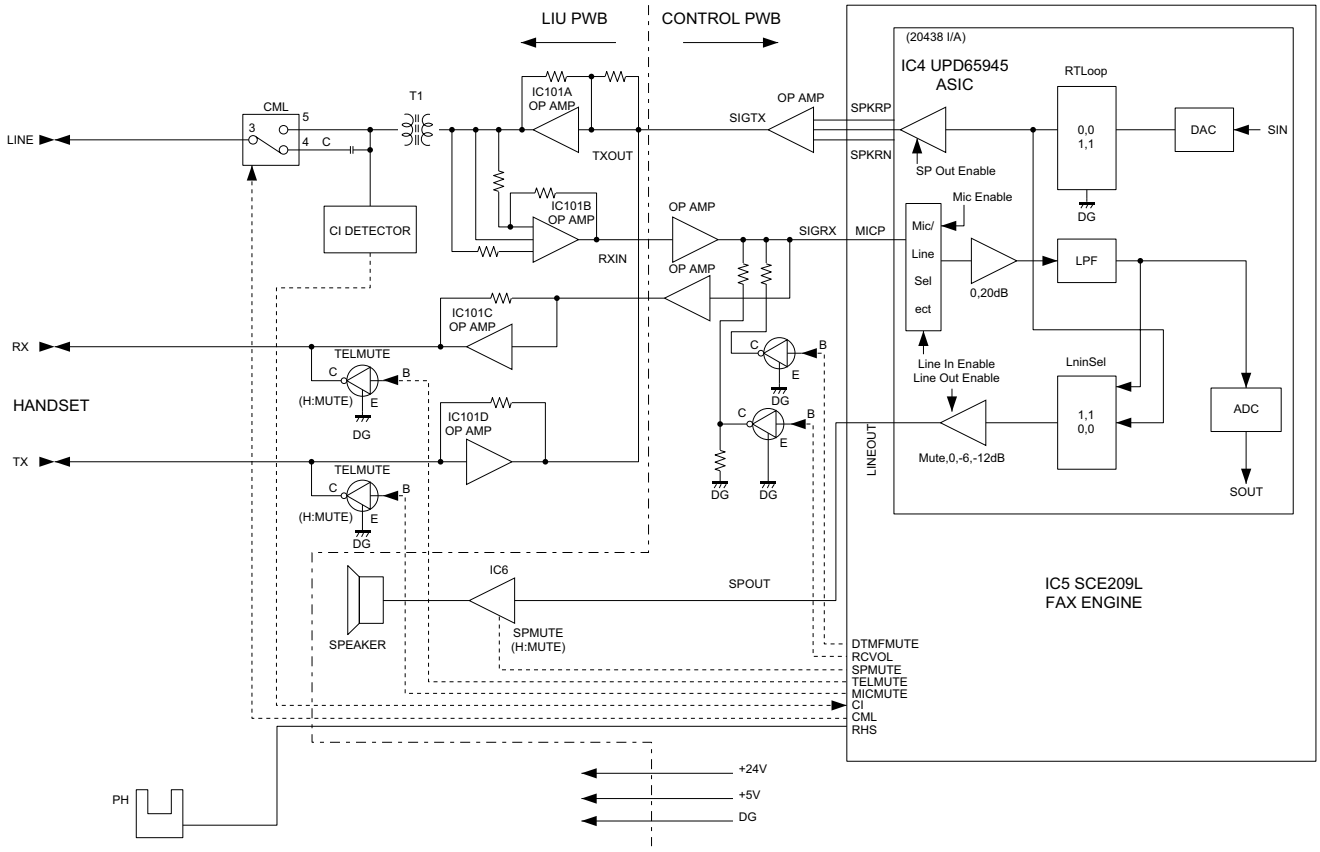


Fig. 6

1.2. Circuit description

The LIU PWB is composed of the following 7 blocks.

1. Speech circuit section
2. Dial transmission section
3. Speaker amplifier section
4. Ringer circuit section
5. CI detection circuit
6. Signal/DTMF transmission level & receiving level
7. Power supply and bias circuit

1.3. Block description

1. Speech circuit section

- The receiver volume is an electronic volume type, this model is switched in 3 steps.

2. Dial transmission section

- D.P. transmission: The CML relay is turned on and off for control in the DP calling system. (Refer to the attached sheet.)
- DTMF transmission: It is formed in the modem, and is output.

3. Speaker amplifier section

- Ringer volume:It is controlled by the combination of the attenuator value of the LINE DRIVER in the modem and the ringer sending level sent from the modem.
- Speaker volume:It is controlled by the attenuator value of the LINE DRIVER in the modem.

4. Ringer circuit section

- The ringer sound is formed in the tone of modem when CI signal is detected. The amplifier circuit drives the speaker of the main body.

5. CI detection circuit

- CI is detected by the photo coupler which is integrated in series in the primary side TEL circuit well proven in the existing unit.

6. Signal/DTMF transmission level & receiving level

- Signal transmission level setting: ATT -8 dB Circuit output: -11.5 dBm.
- DTMF transmission level setting: HF -2.5 dBm SLF -4.0 dBm Thus, set the level.

7. Power supply and bias circuit

- The voltage of +5 V and +24 V are supplied from the control PWB unit.

1.4. Signal selection

The following signals are used to control the transmission line of TEL/FAX signal. For details, refer to the signal selector matrix table.

[Control signals from output port]

Signal Name	Description
CML	Line connecting relay and DP generating relay H: Line make L: Line break
SP MUTE	Speaker tone must control signal H: Muting L: Muting cancel
TELMUTE	Handset reception mute control signal H: Muting L: Muting cancel
RCVOL DTMFMUTE	Speaker volume control signal

	RCVOL	DPMFMUTE
High	L	L
Middle	L	H
Low & DTMF	H	H

[Signals for status recognition according to input signals]

Signal Name	Function
RHS-	H: The handset is in the on-hook state. L: The handset is in the off-hook state.
CI-	Incoming call (CI) detection signal.

[Other signals]

Signal Name	Function
TEL IN	Receiving signal from line or modem.
SPOUT	Speaker output signal.
TXOUT	Transmission (DTMF) analog signal output from modem.
RXIN	Reception (DTMF, others) analog signal input into modem.

NO	Signal Name (CNLIU)	NO	Signal Name (CNLIU)
1	+24V	7	TELMUTE
2	ADG	8	RXIN
3	ADG	9	TXOUT
4	+5V	10	CML
5	RHS-	11	CI-
6	TELIN	12	MICMUTE

(Example: SENDING/RECEIVING)

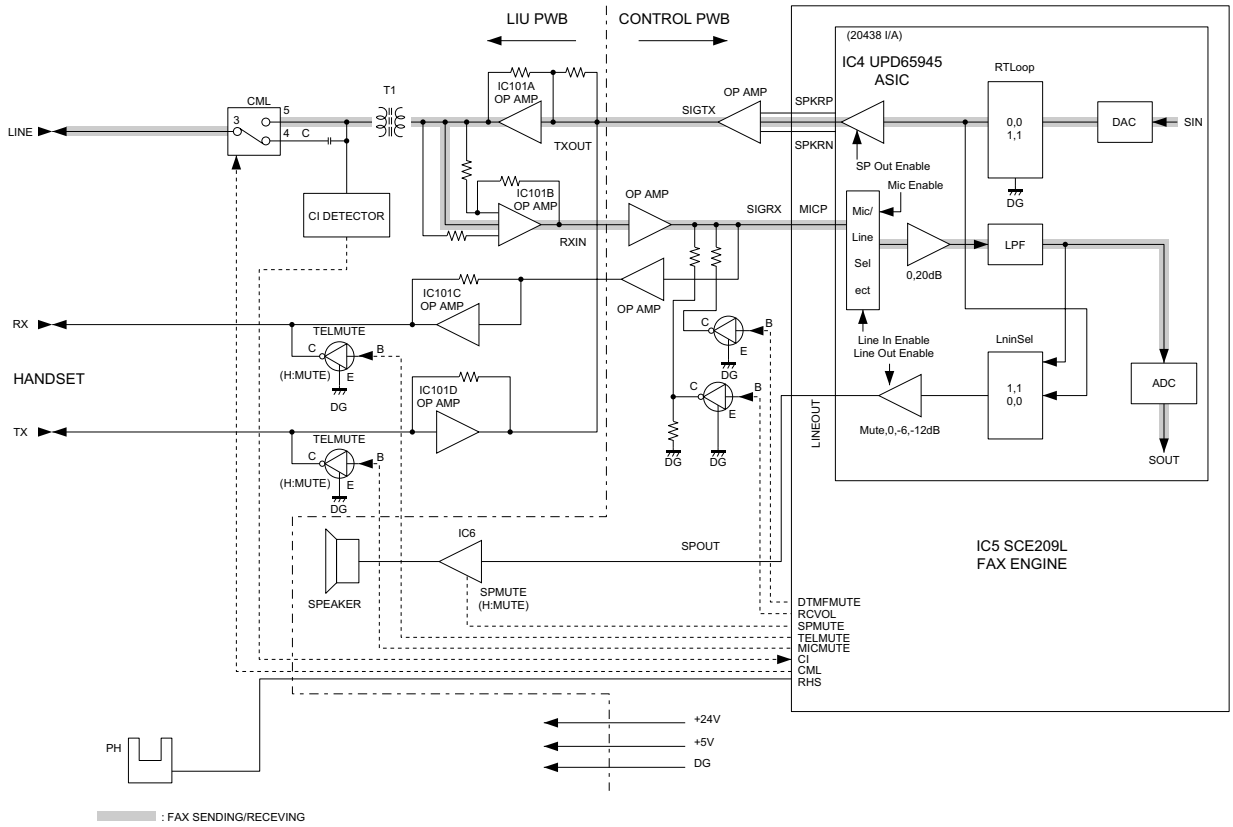


Fig. 7

[4] Circuit description of power supply PWB

1. Block diagram

This power supply unit has the function to convert the AC 120 V (60 Hz) to DC 5 V, and provide these outputs to the equipment. The following explains the function of each block.

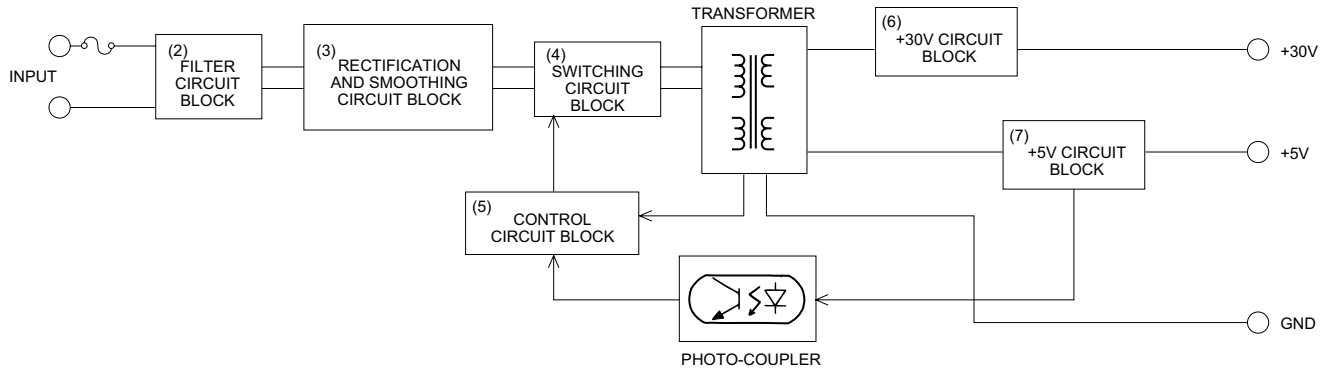


Fig.8

2. Filter circuit block

This circuit reduces the outgoing noise through the input lines which is generated in the power supply unit, and prevents the invasion of the noise from the lines.(the excessive surge such as the thunder is prevented by the varistor(Z1).)

3. Rectification and smoothing circuit block

This circuit rectifies and smoothes the AC input, and provides the DC voltage to the switching circuit block.

4. Switching circuit block

This circuit converts the DC voltage (provided from the Rectification and smoothing circuit block) to the high frequency pulse voltage by FET(Q1)'s switching (on/off repeat), and provides the energy to the transformer(T1). It discharges the energy (charged during the FET ON time) to the secondary side during the FET OFF time through the secondary windings. The output voltage on the secondary side provided by the energy depend on the ratio of the winding turns (primary : secondary) etc.

5. Control circuit block

This circuit block controls the output voltage by transmitting the detected +5 V voltage to the primary control circuit through the photo-coupler(PC1). In case of the over-current, this circuit reduces providing the energy to the transformer. In case of the over-voltage, this circuit reduces providing the energy to the transformer by letting the Power-Zener(D104; connected between the +30 V output voltage and GND) into the short mode and letting the over-current protection circuit work.

6. +30V circuit block

This circuit block rectifies and smoothes the high-frequency pulse voltage provided by the transformer, and provides the DC +30 V output to the equipment.

7. +5V circuit block

This circuit block rectifies and smoothes the high-frequency pulse voltage provided by the transformer, and provides about DC +5 V output to the equipment. The output voltage is adjusted by the variable resistor (VR101).

[5] Circuit description of CIS unit

1. CIS

Cis is an image sensor which puts the original paper in close contact with the full-size sensor for scanning, being a monochromatic type with the pixel number of 1,728 dots and the main scanning density of 8 dots/mm.

It is composed of sensor, rod lens, LED light source, light-conductive plate, control circuit and so on, and the reading line and focus are previously adjusted as the unit.

Due to the full-size sensor, the focus distance is so short that the set is changed from the light weight type to the compact type.

2. Waveforms

The following clock is supplied from SCE209L of the control board, and VO is output.

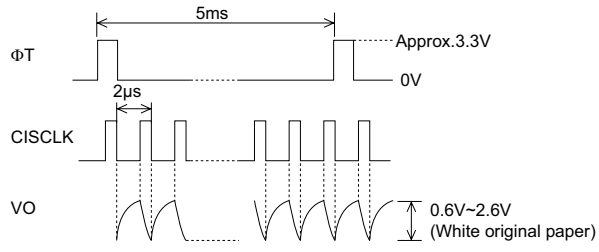
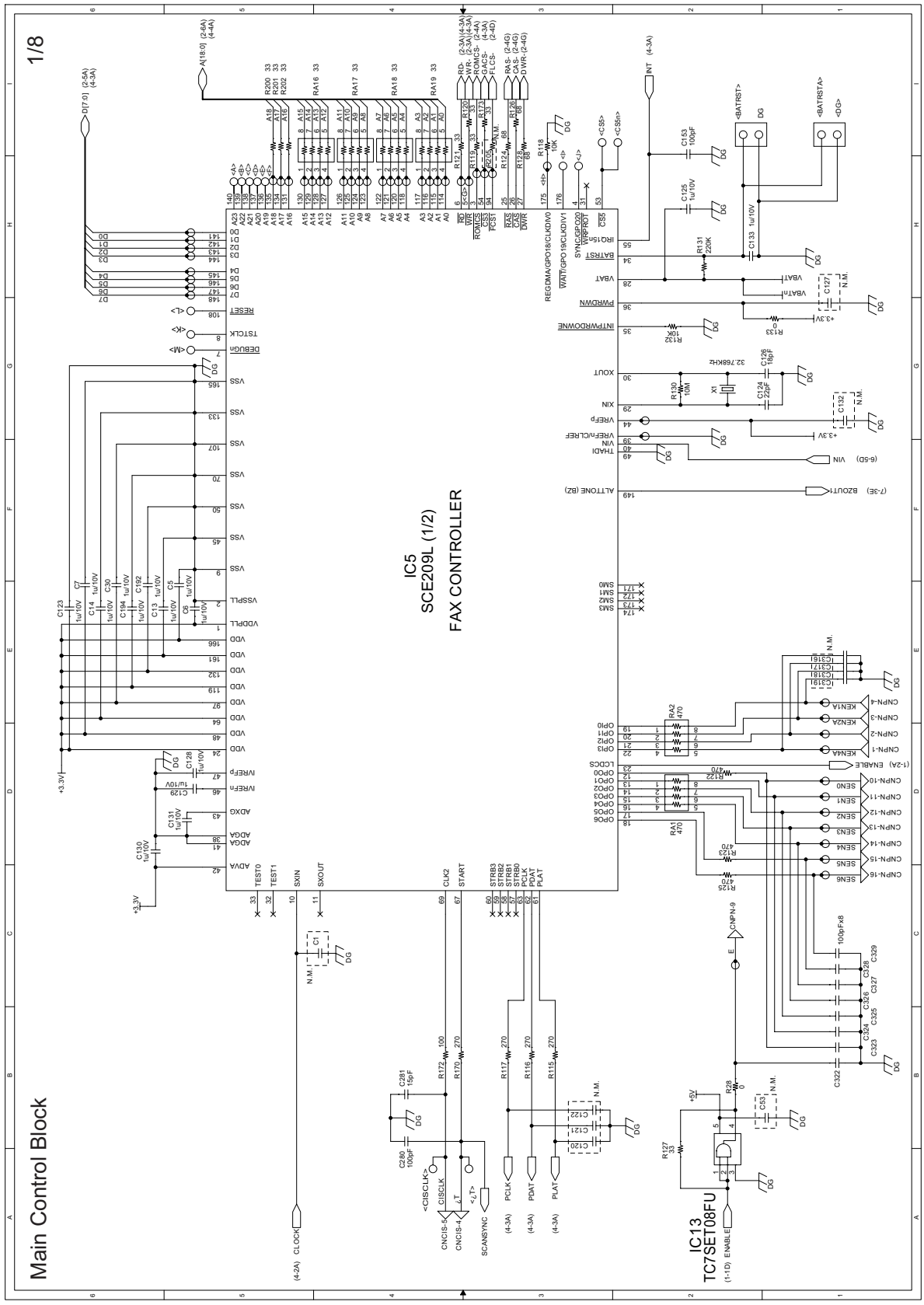


Fig.9

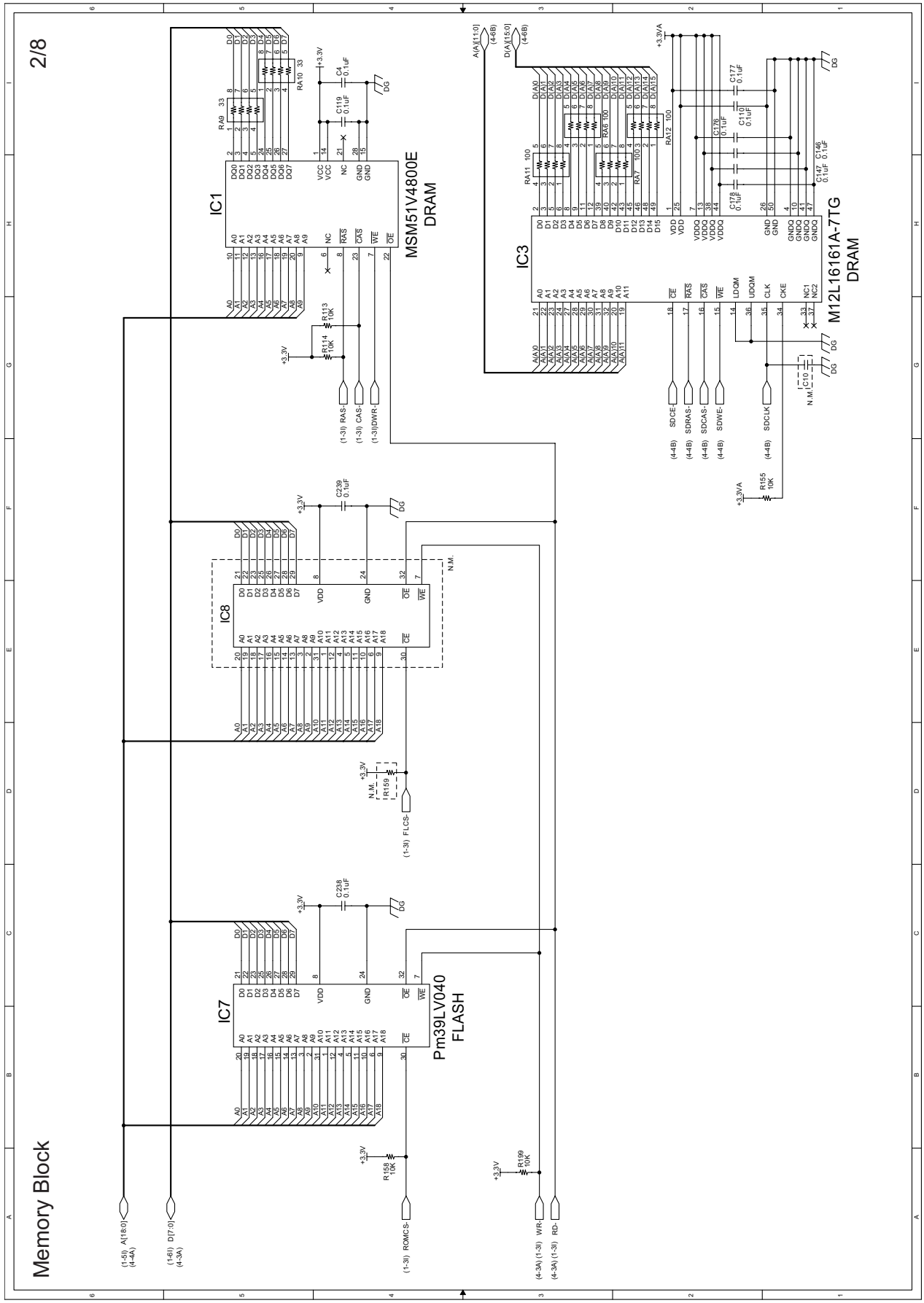
CHAPTER 6. CIRCUIT SCHEMATICS AND PARTS LAYOUT

[1] Control PWB circuit

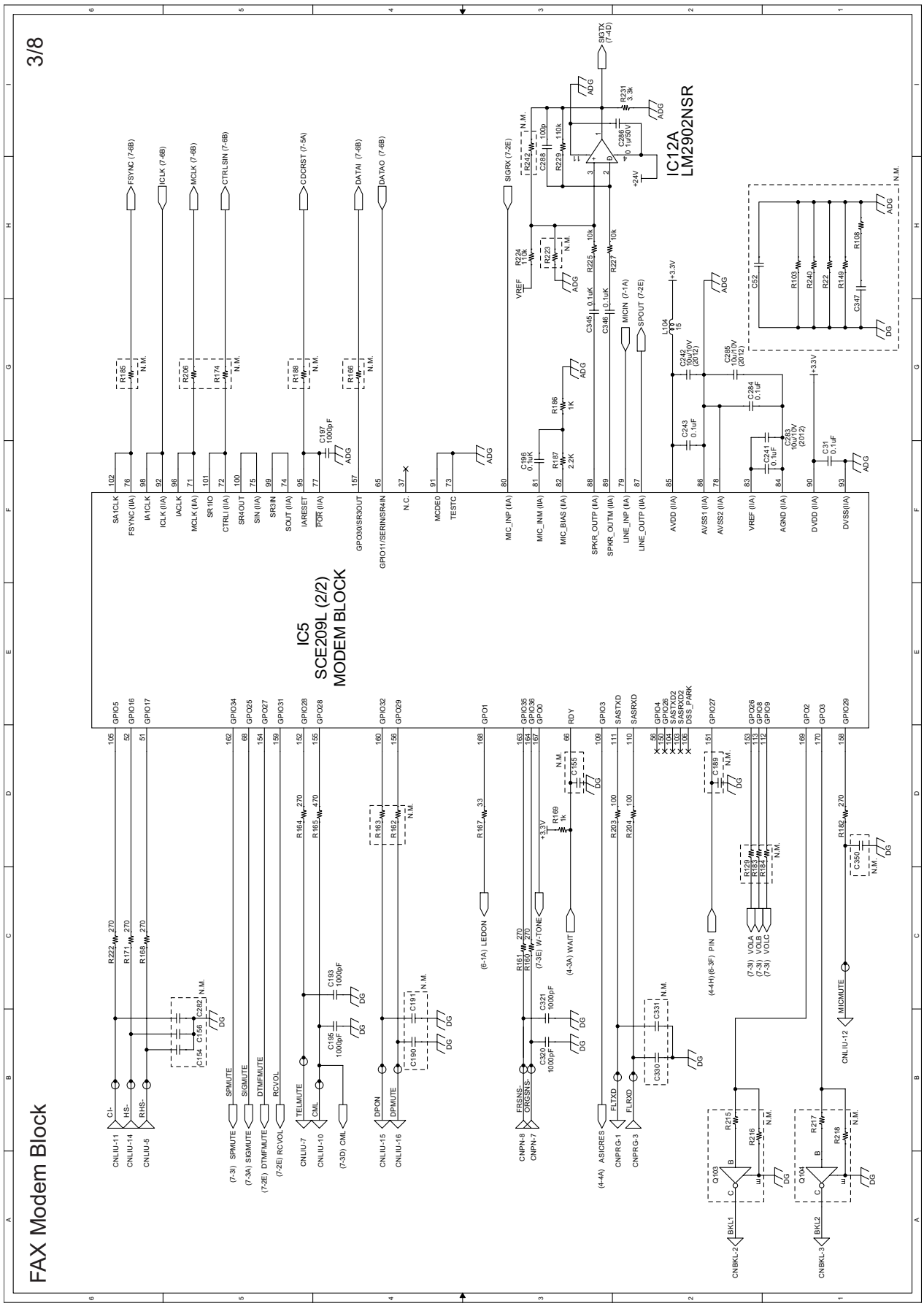
1. Main Control Block (1/8)



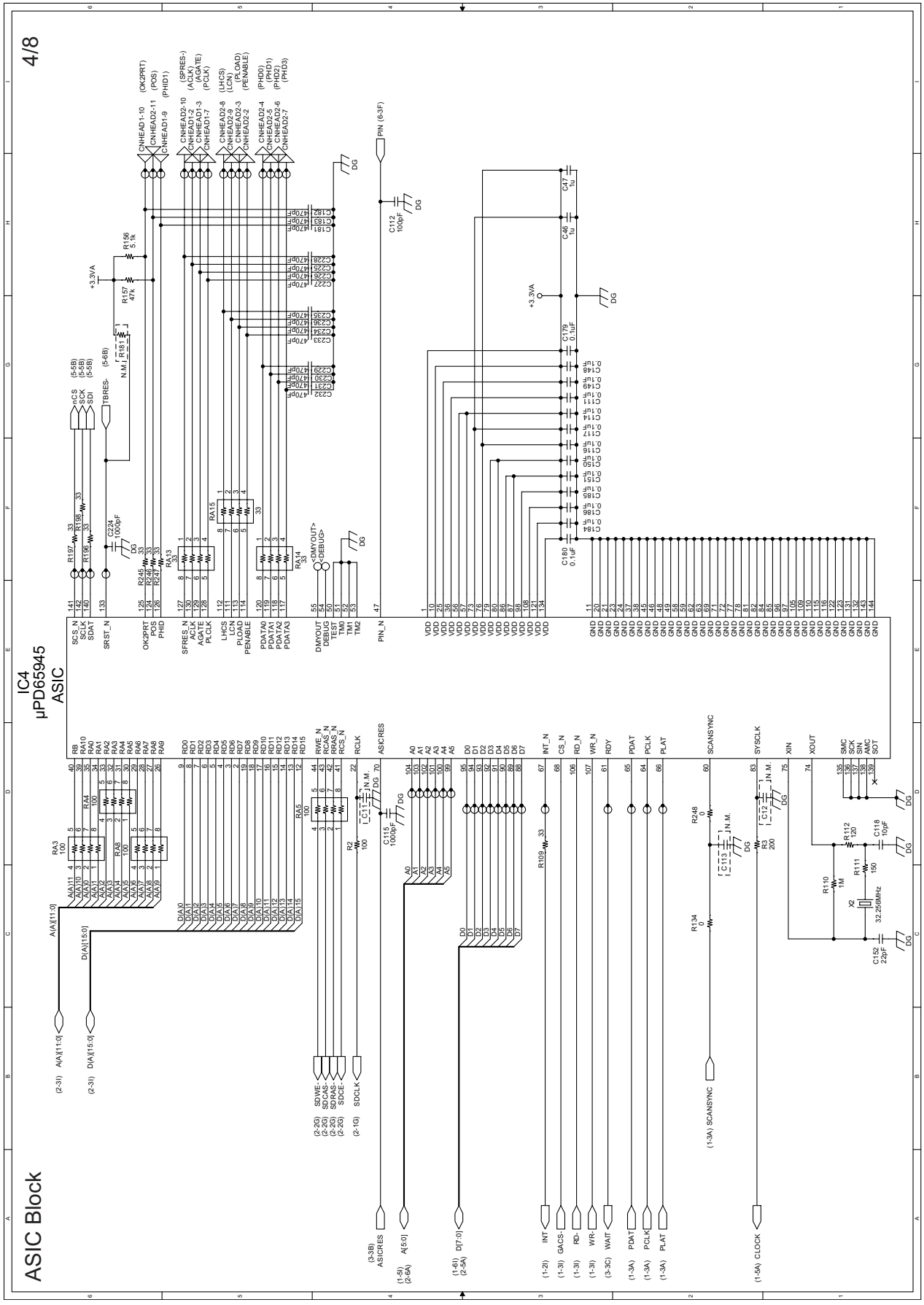
2. Memory Block (2/8)



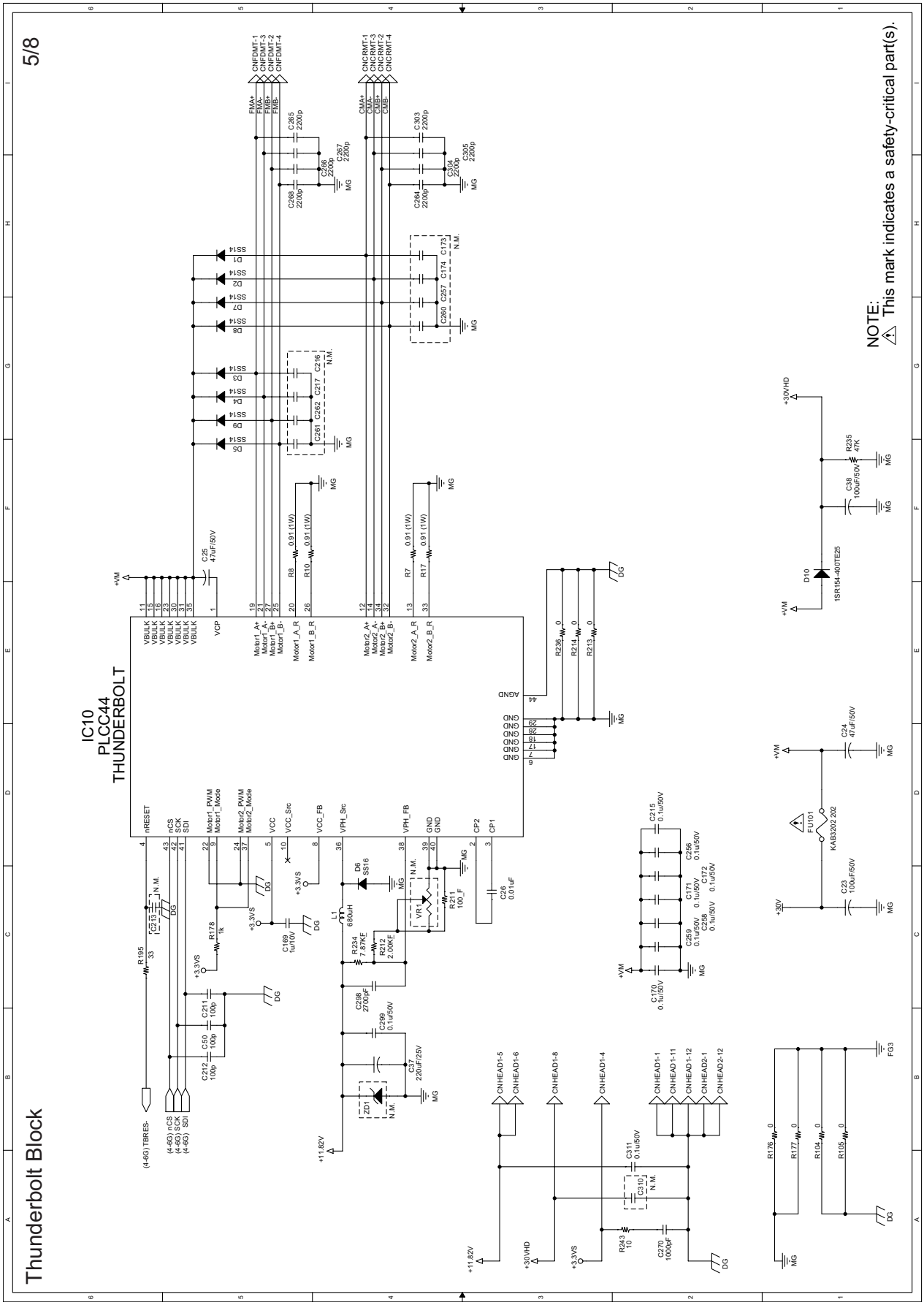
3. FAX Modem Block (3/8)



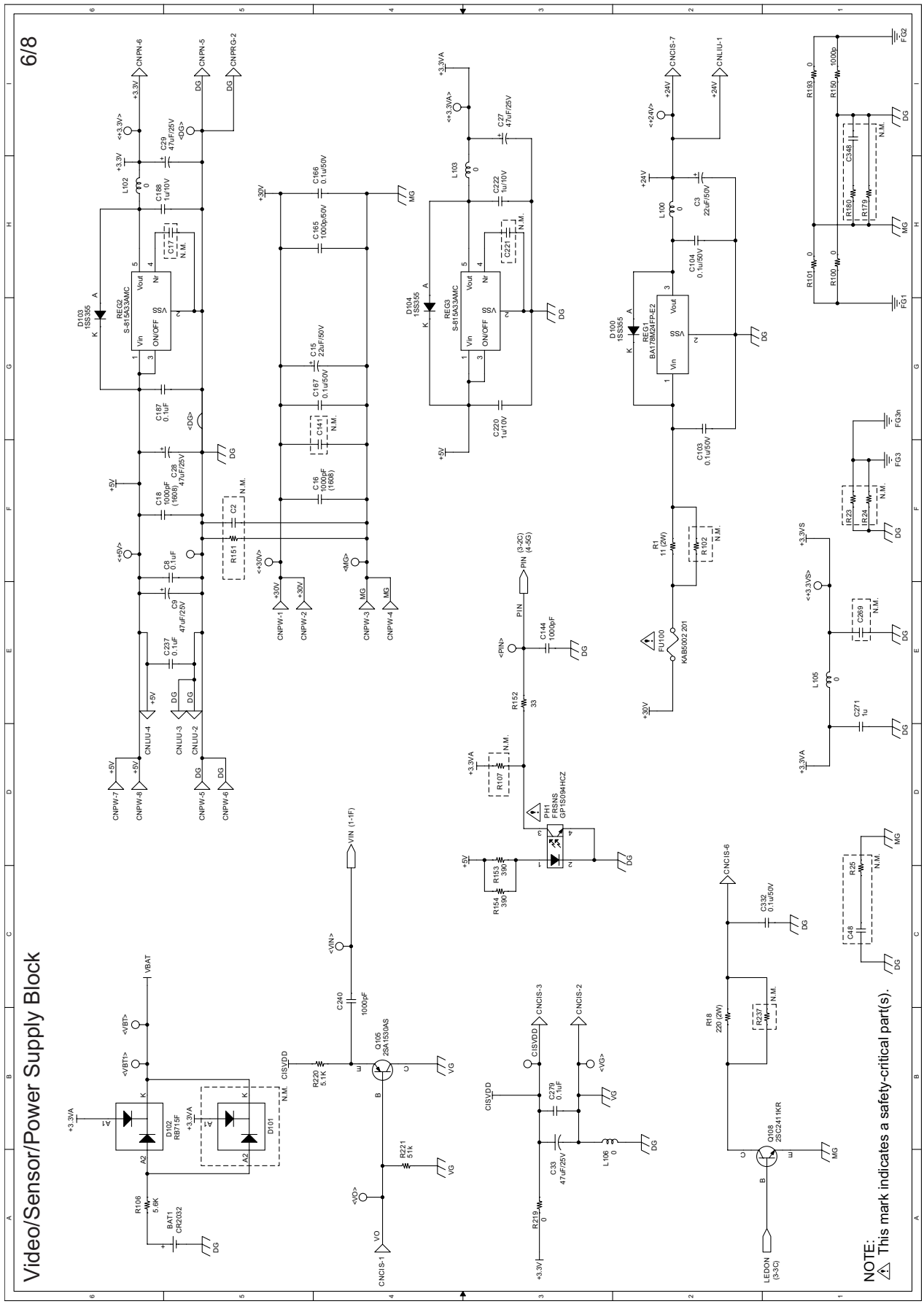
4. ASIC Block (4/8)



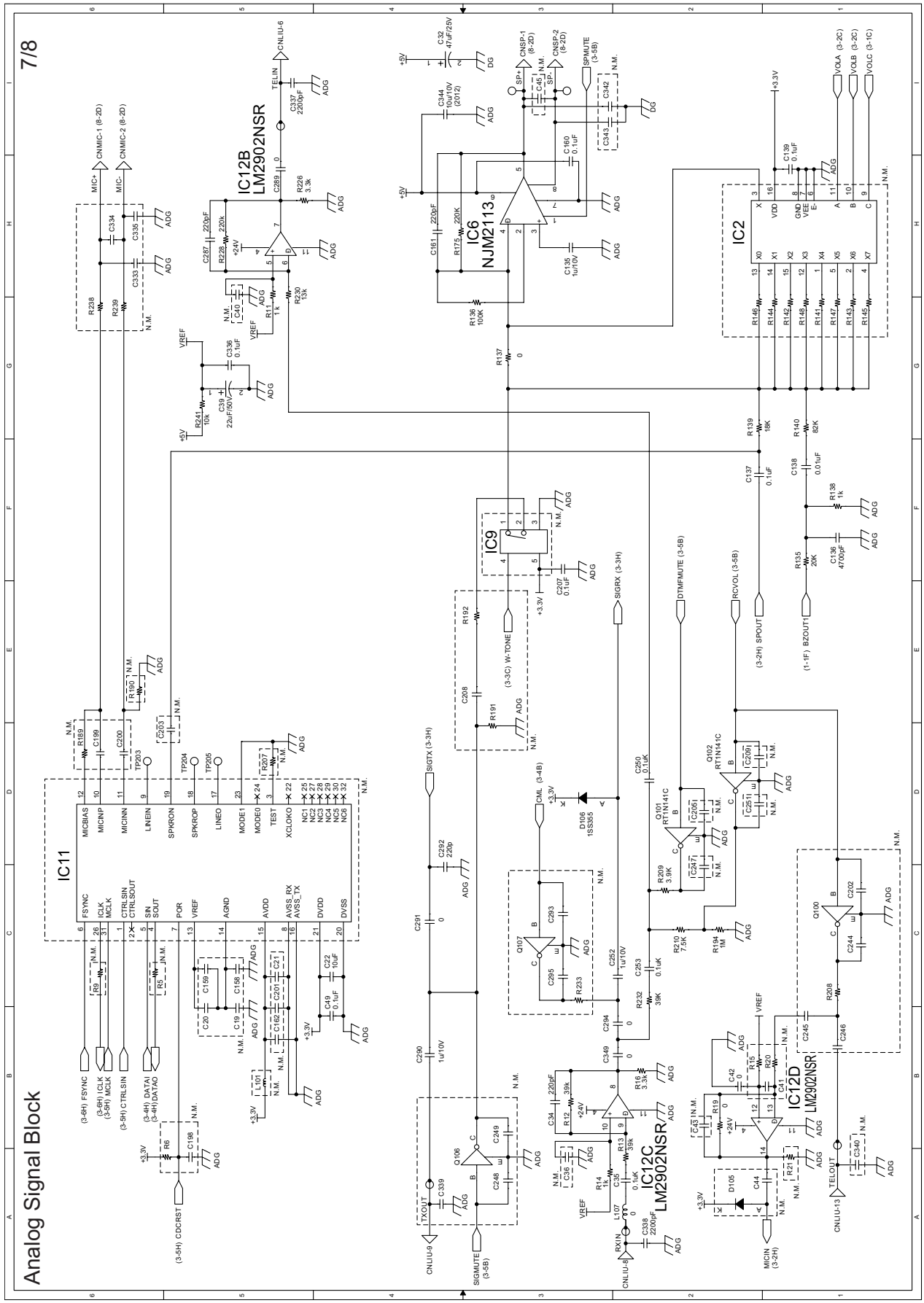
5. Thunderbolt Block (5/8)



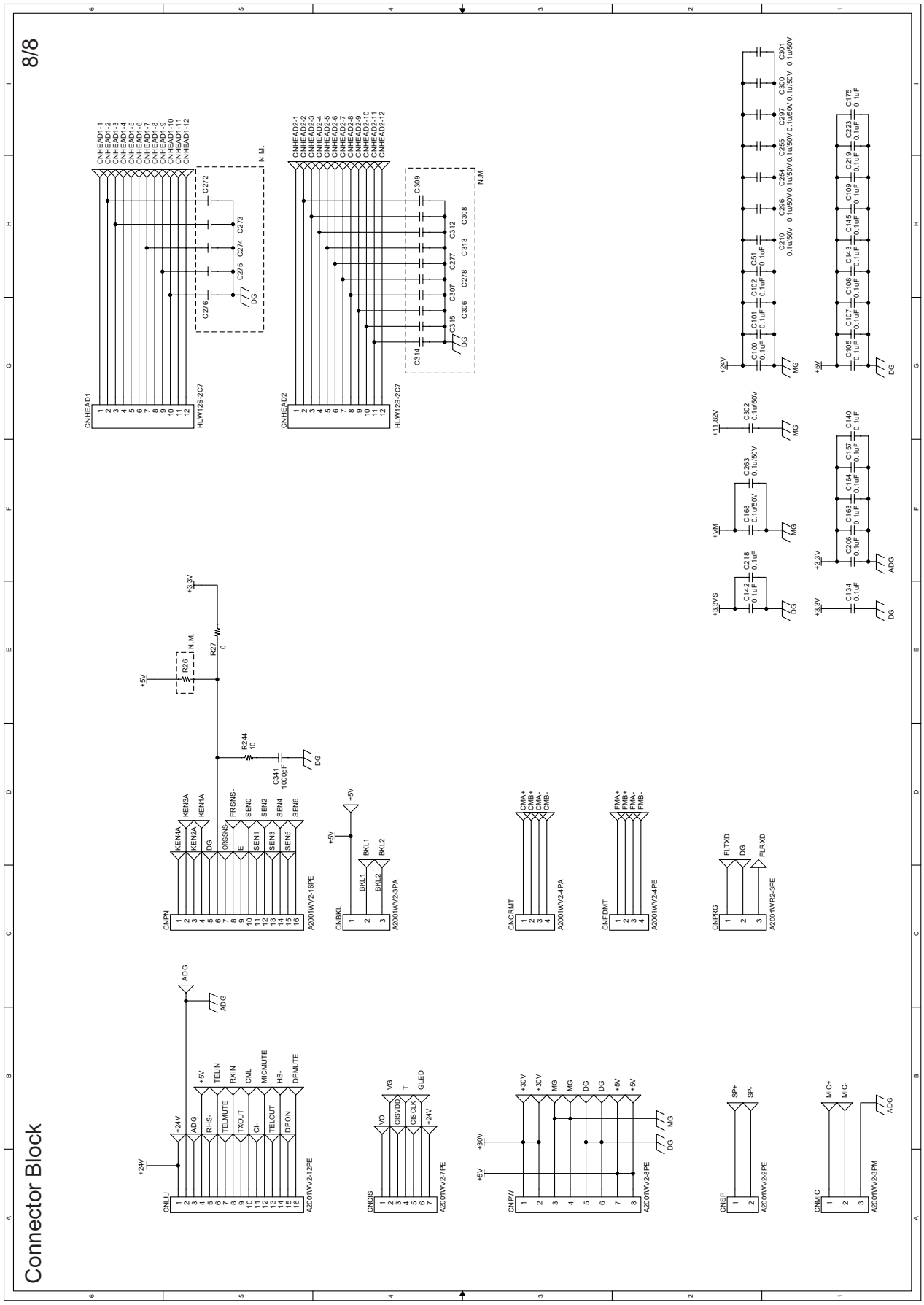
6. Video/Sensor/Power Supply Block (6/8)



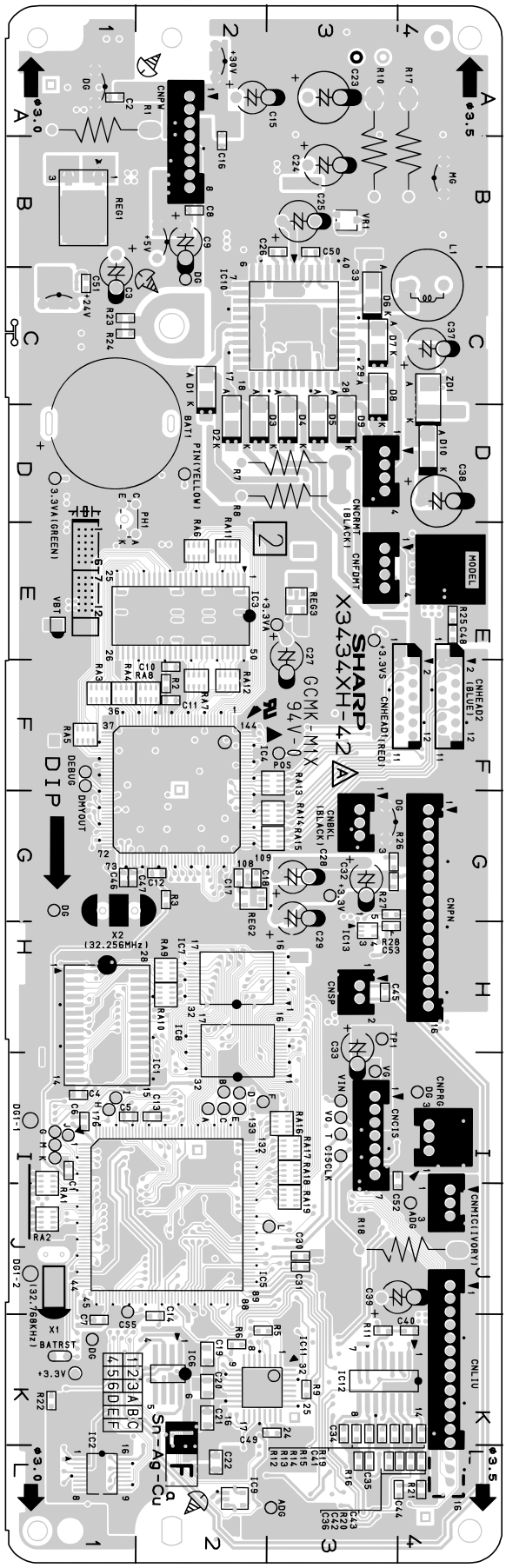
7. Analog Signal Block (7/8)



8. Connector Block (8/8)



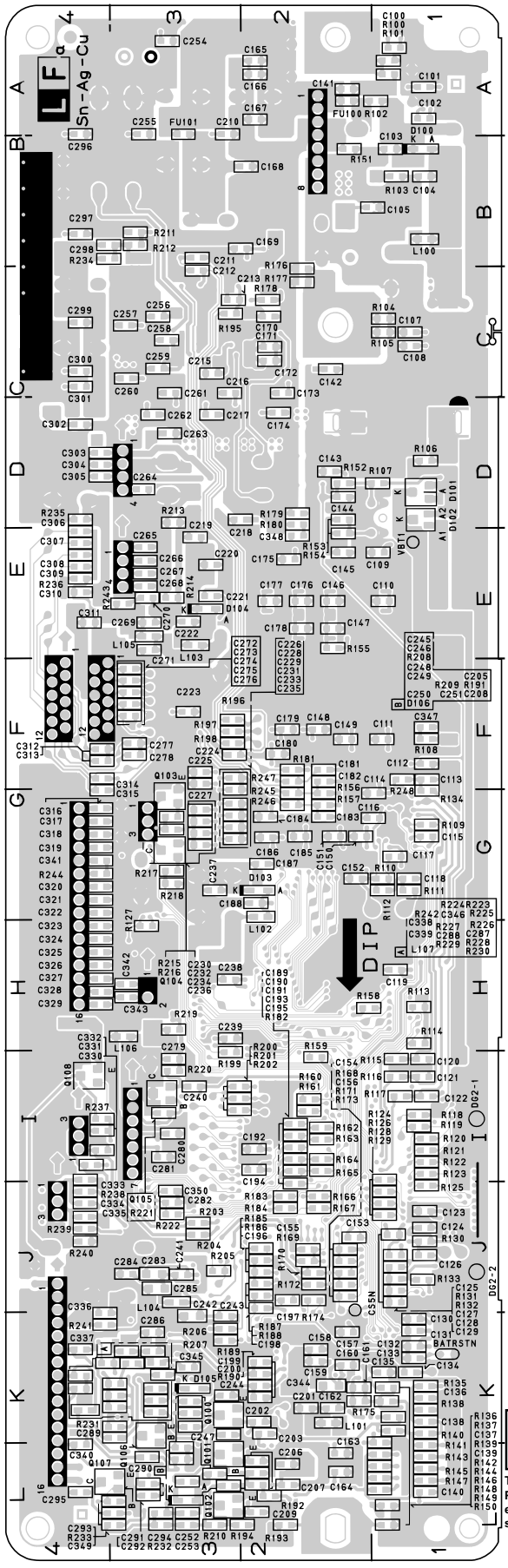
9. Control PWB parts layout (Top side)



LFa
Sn-Ag-Cu

The CONTROL PWB of the model employs lead-free solder.

10. Control PWB parts layout (Bottom side)

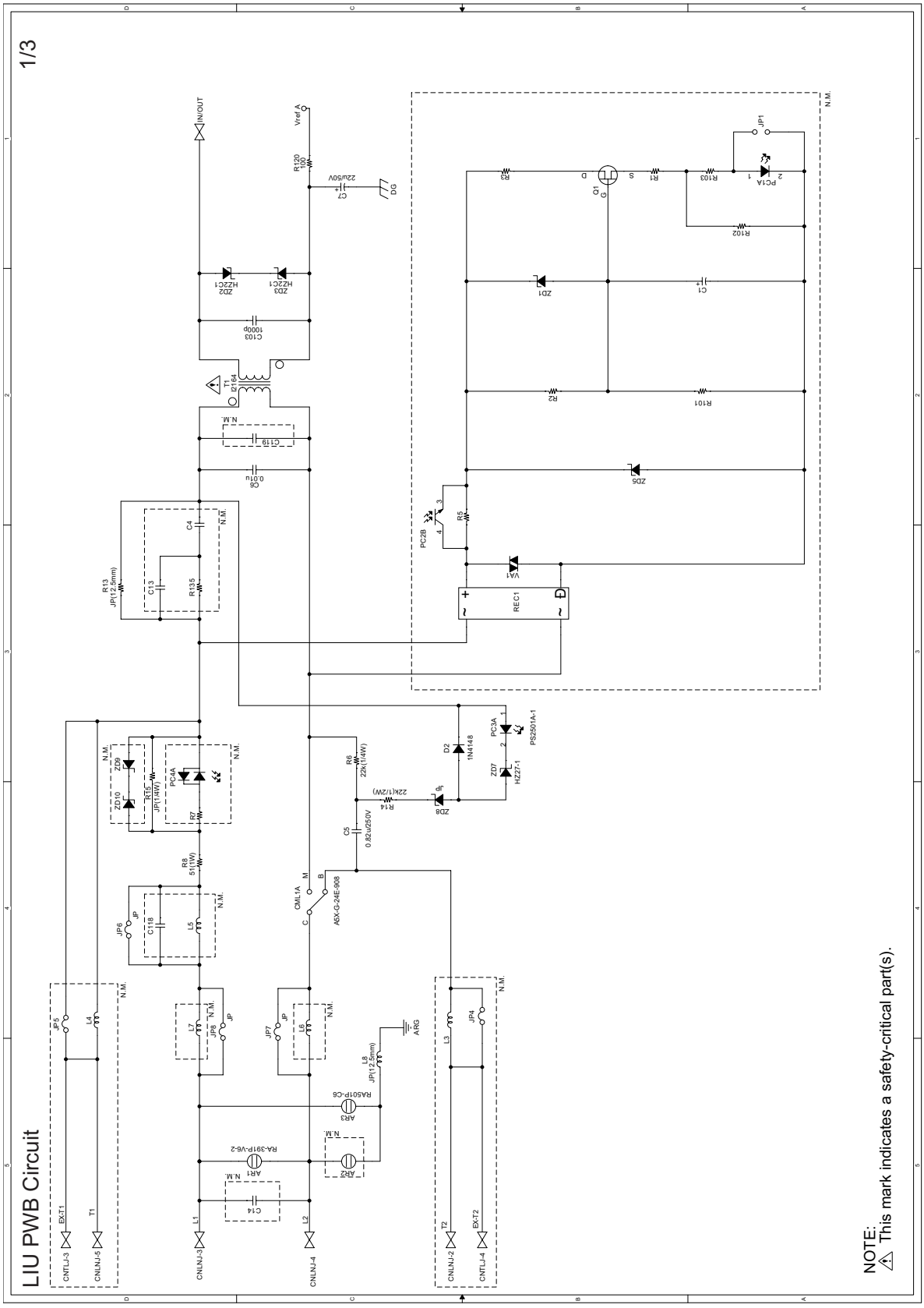


LF a Sn-Ag-Cu

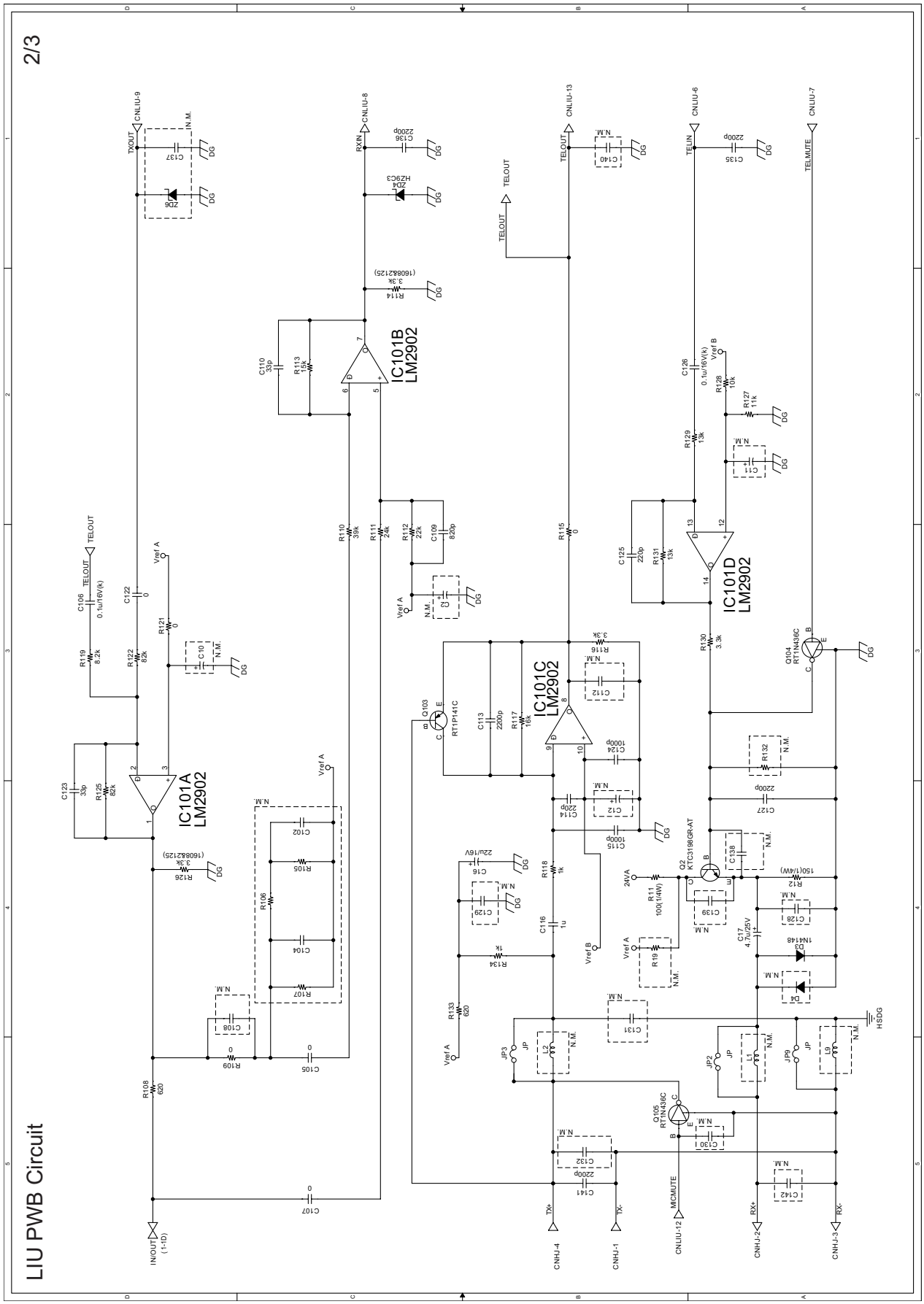
The CONTROL PWB of the model employs lead-free solder.

[2] LIU PWB circuit

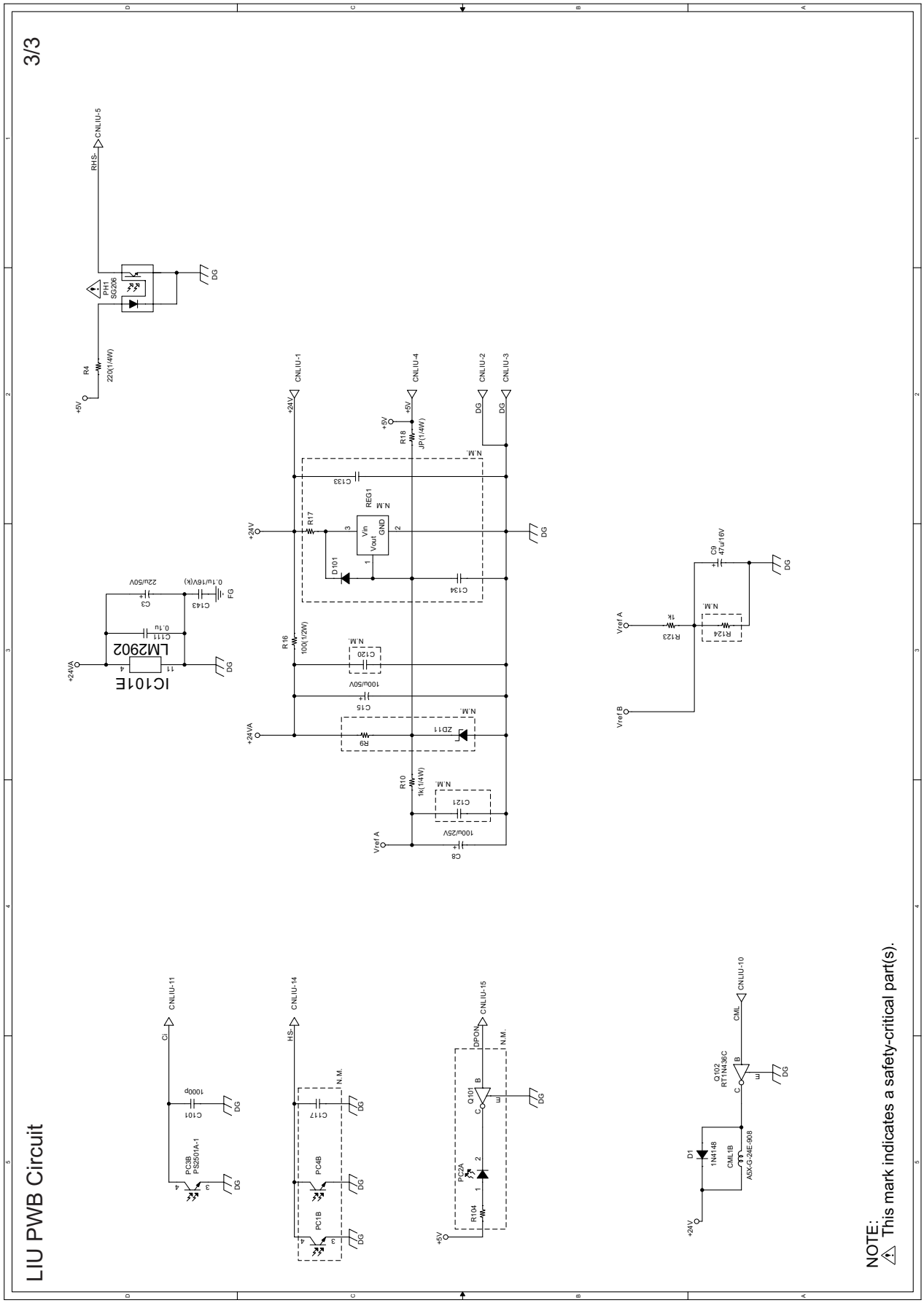
1. LIU PWB Circuit (1/3)



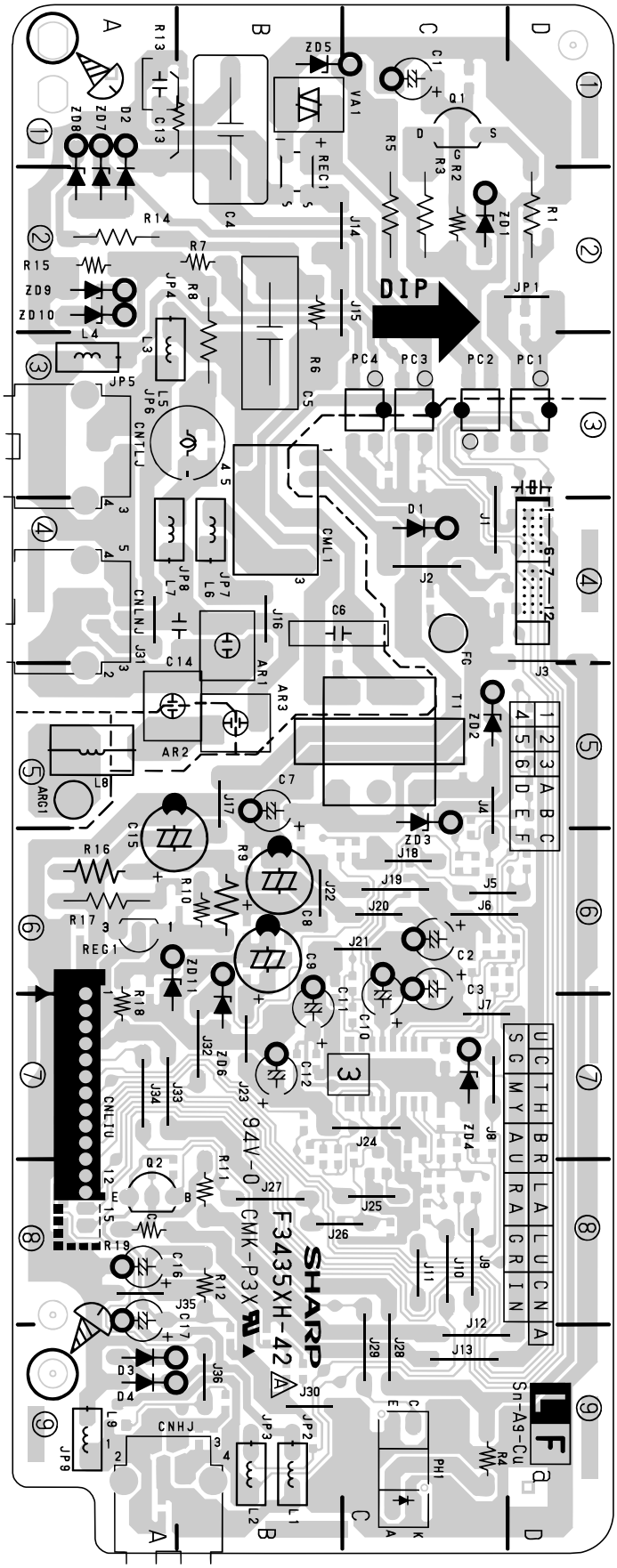
2. LIU PWB Circuit (2/3)



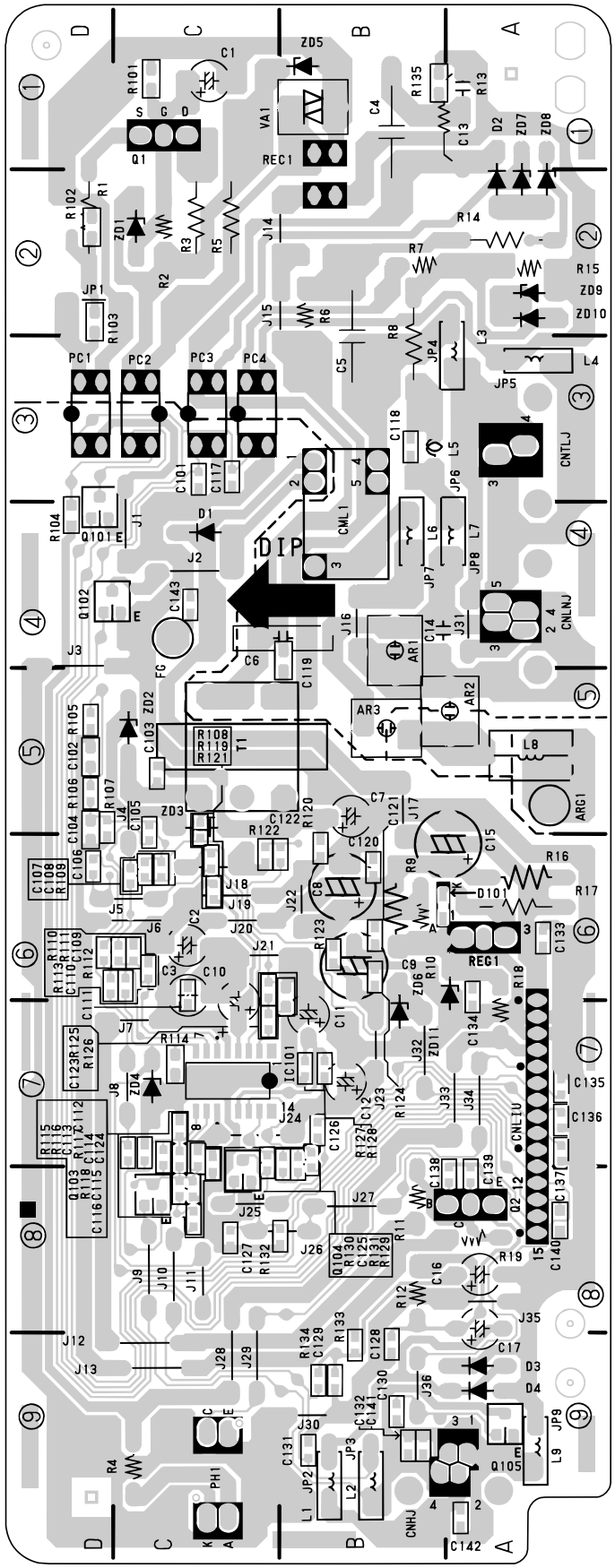
3. LIU PWB Circuit (3/3)



4. LIU PWB parts layout (Top side)



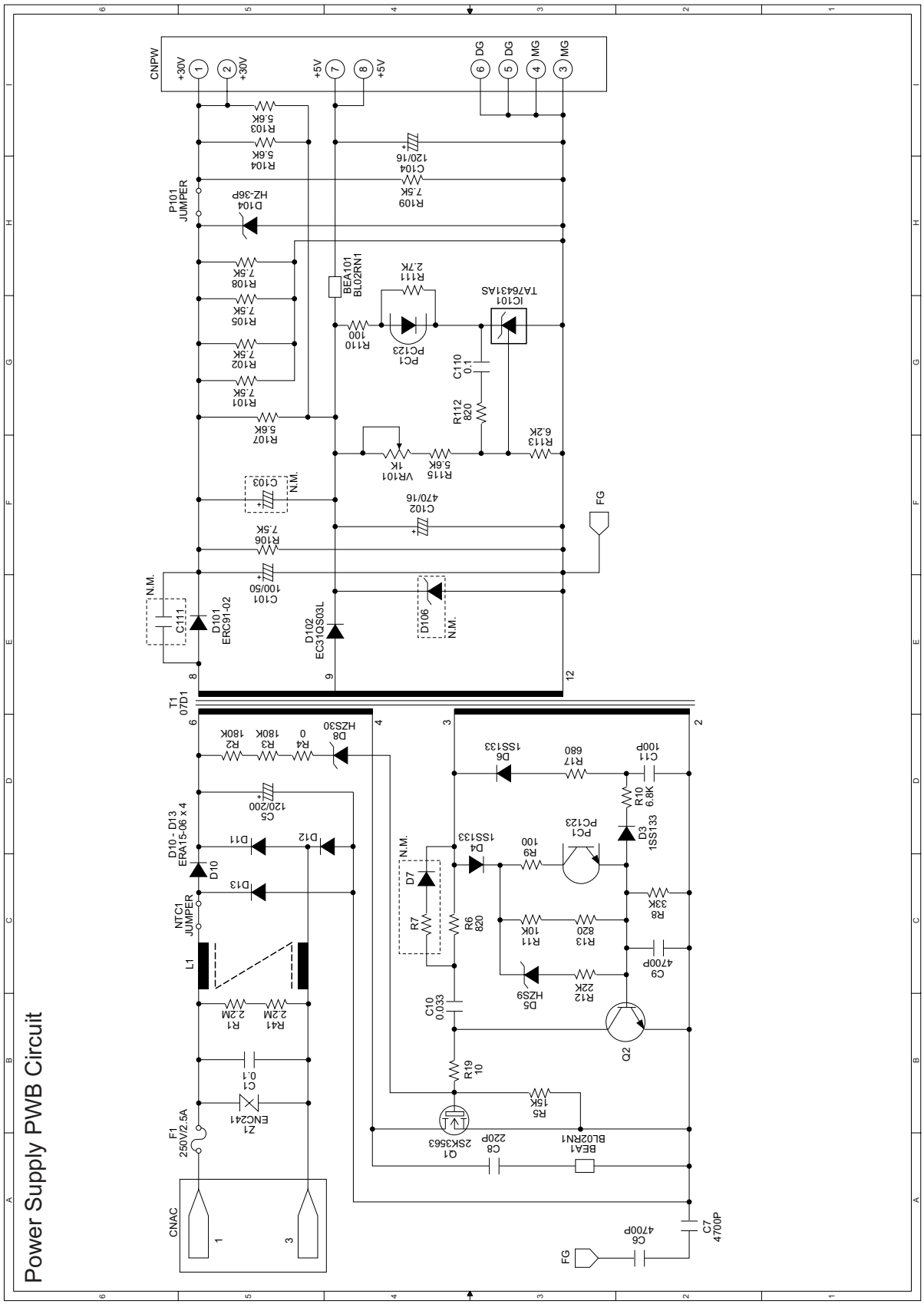
5. LIU PWB parts layout (Bottom side)



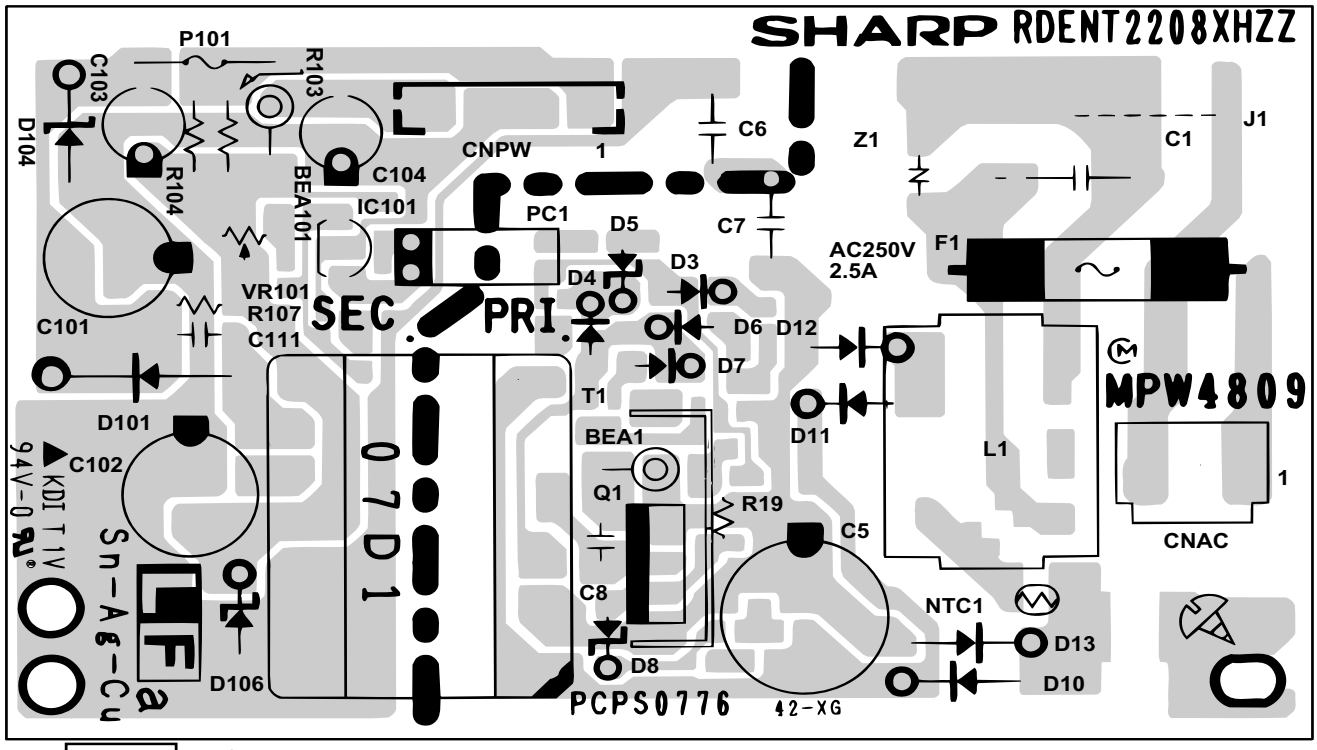
The TEL/LIU PWB of the model employs lead-free solder.

[3] Power Supply PWB circuit

1. Power Supply PWB circuit



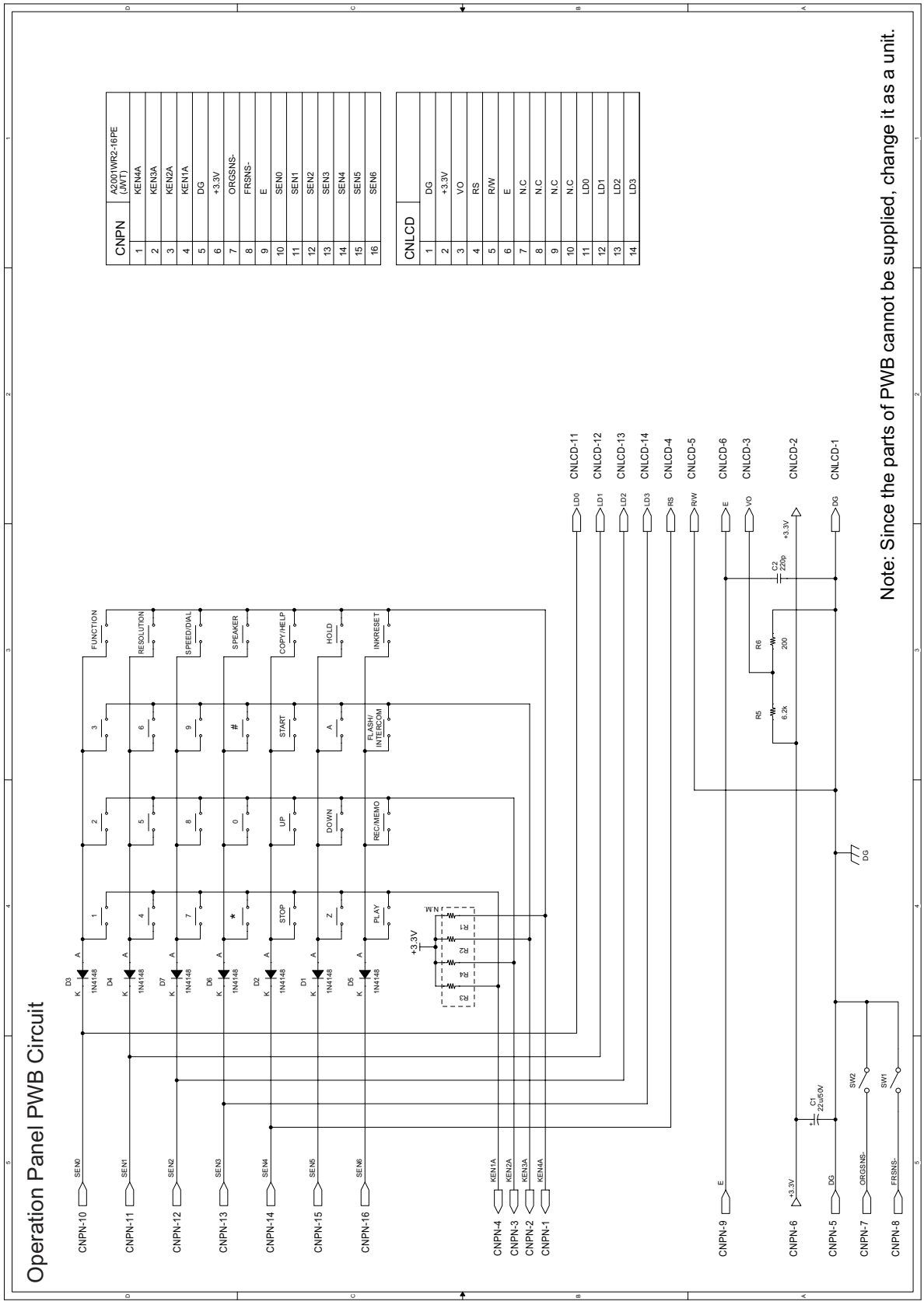
2. Power Supply PWB parts layout (Top side)



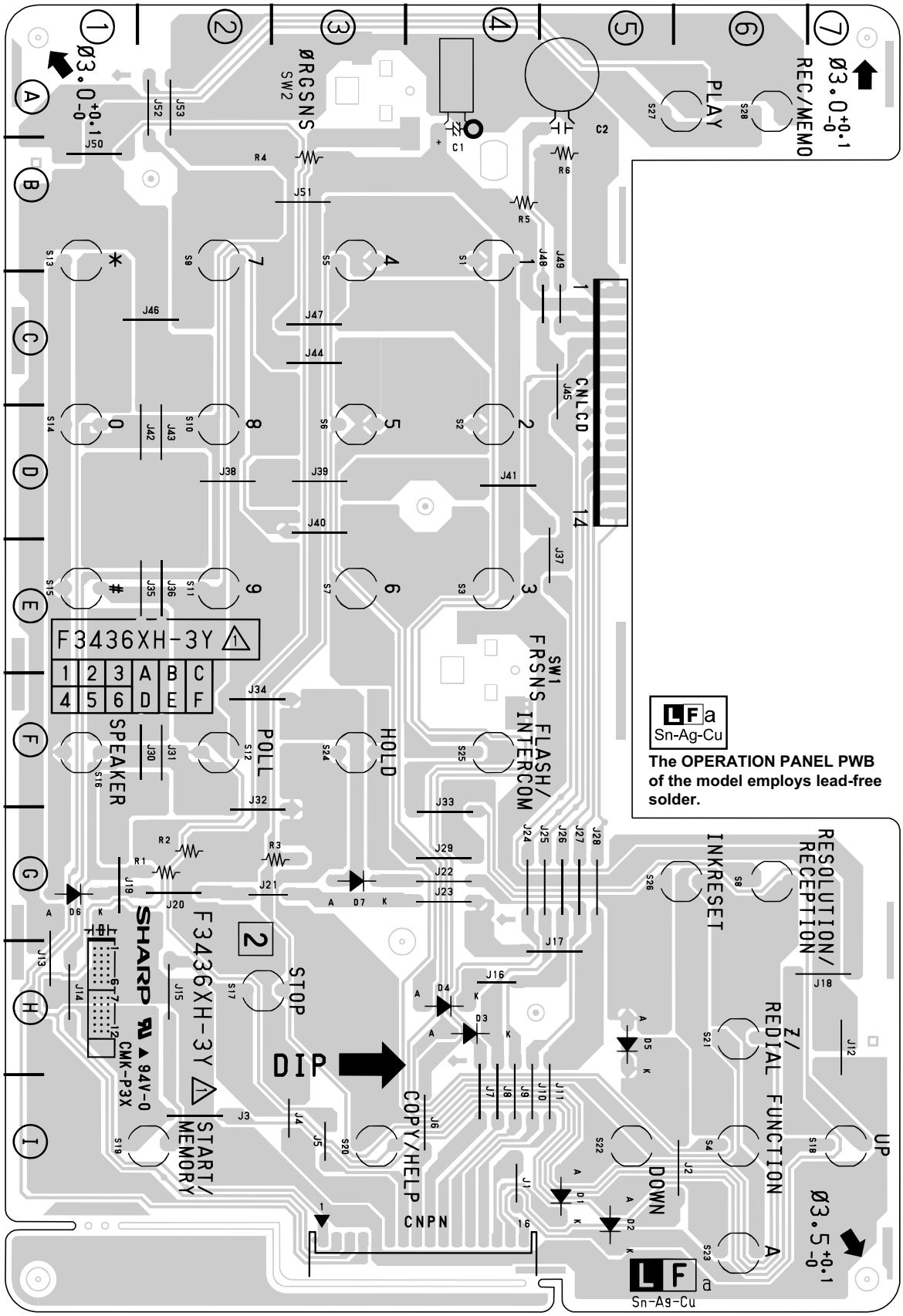
3. Power Supply PWB parts layout (Bottom side)

[4] Operation Panel PWB circuit

1. Operation Panel PWB circuit



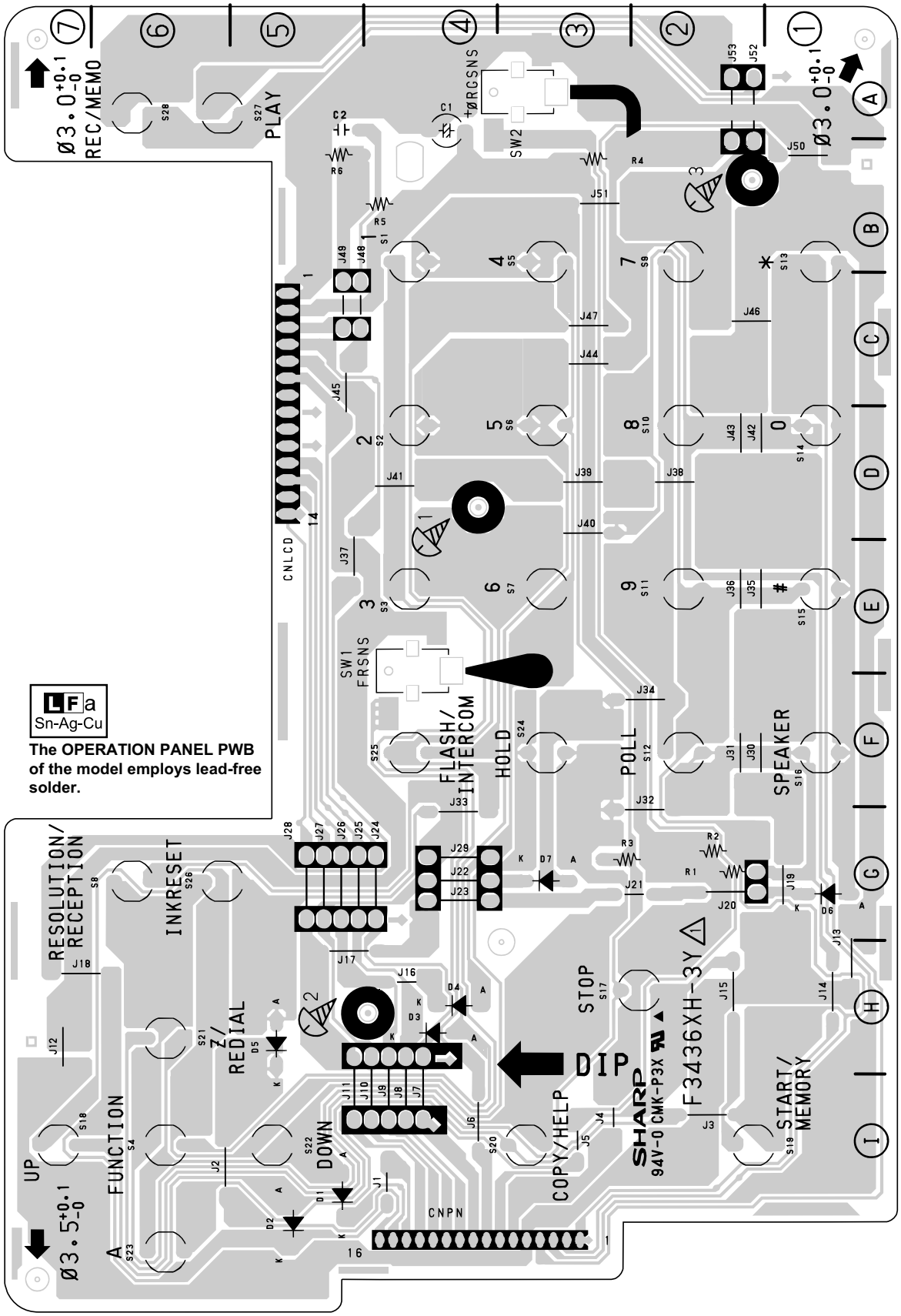
2. Operation Panel PWB parts layout (Top side)



The OPERATION PANEL PWB of the model employs lead-free solder.

Note: Since the parts of PWB cannot be supplied, change it as a unit.

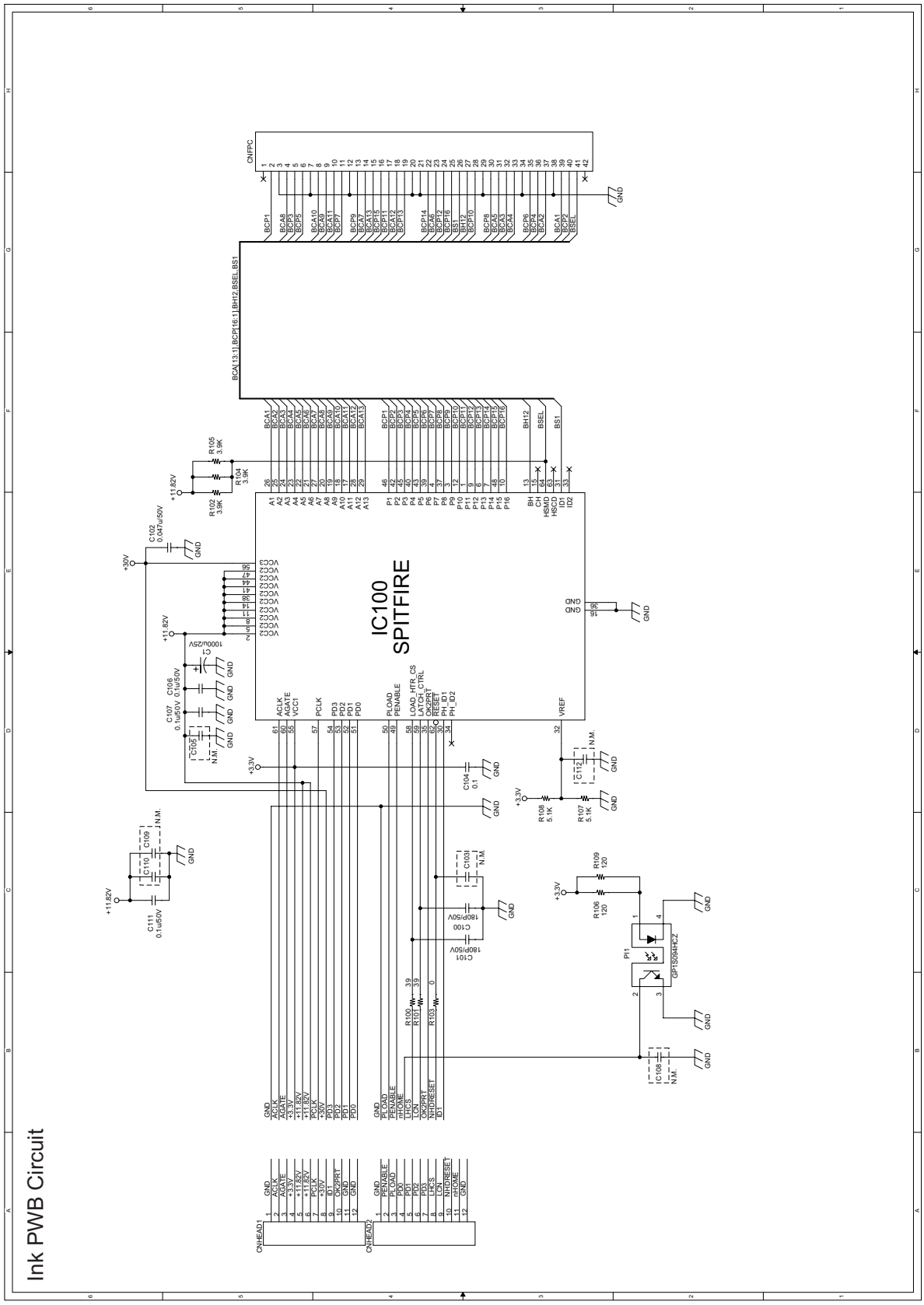
3. Operation Panel PWB parts layout (Bottom side)



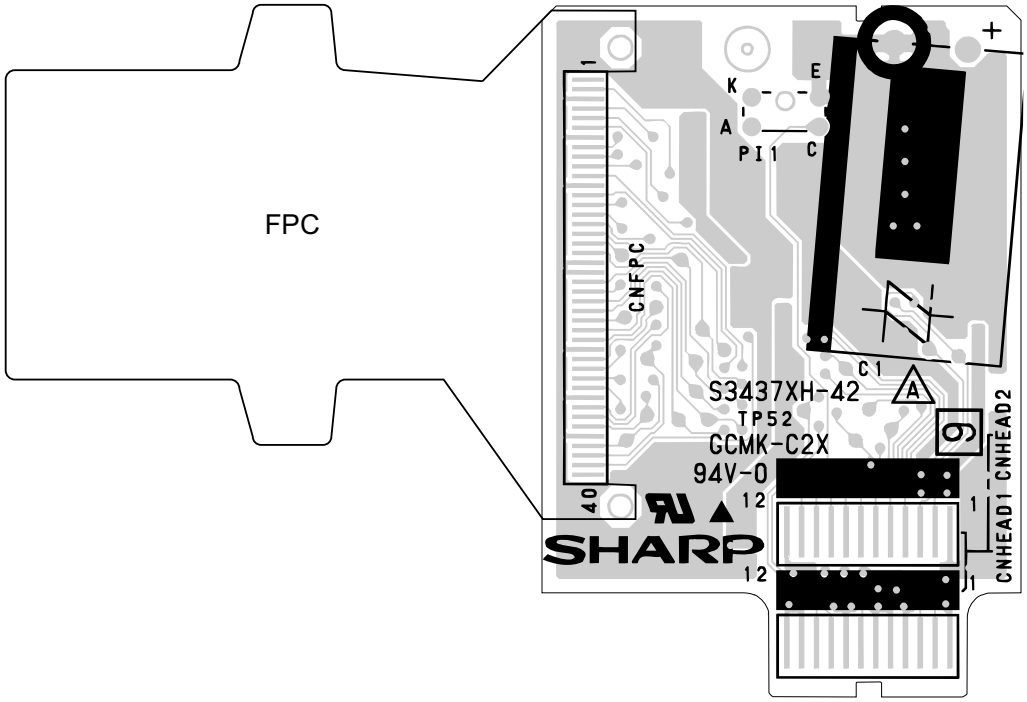
Note: Since the parts of PWB cannot be supplied, change it as a unit.

[5] Ink PWB circuit

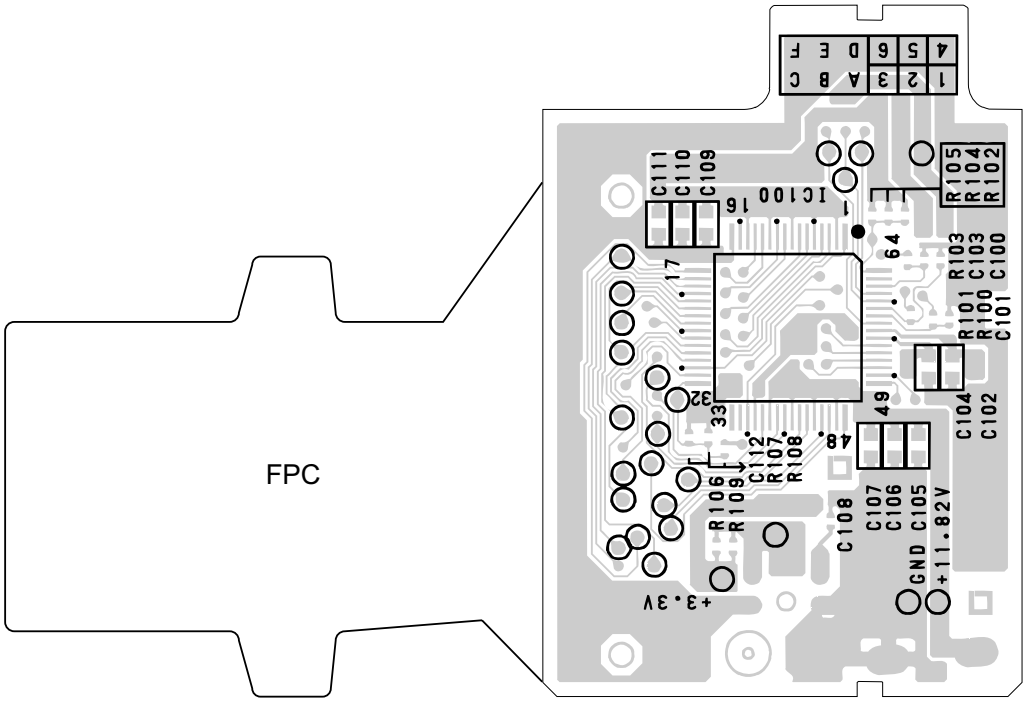
1. Ink PWB Circuit



2. Ink PWB parts layout (Top side)

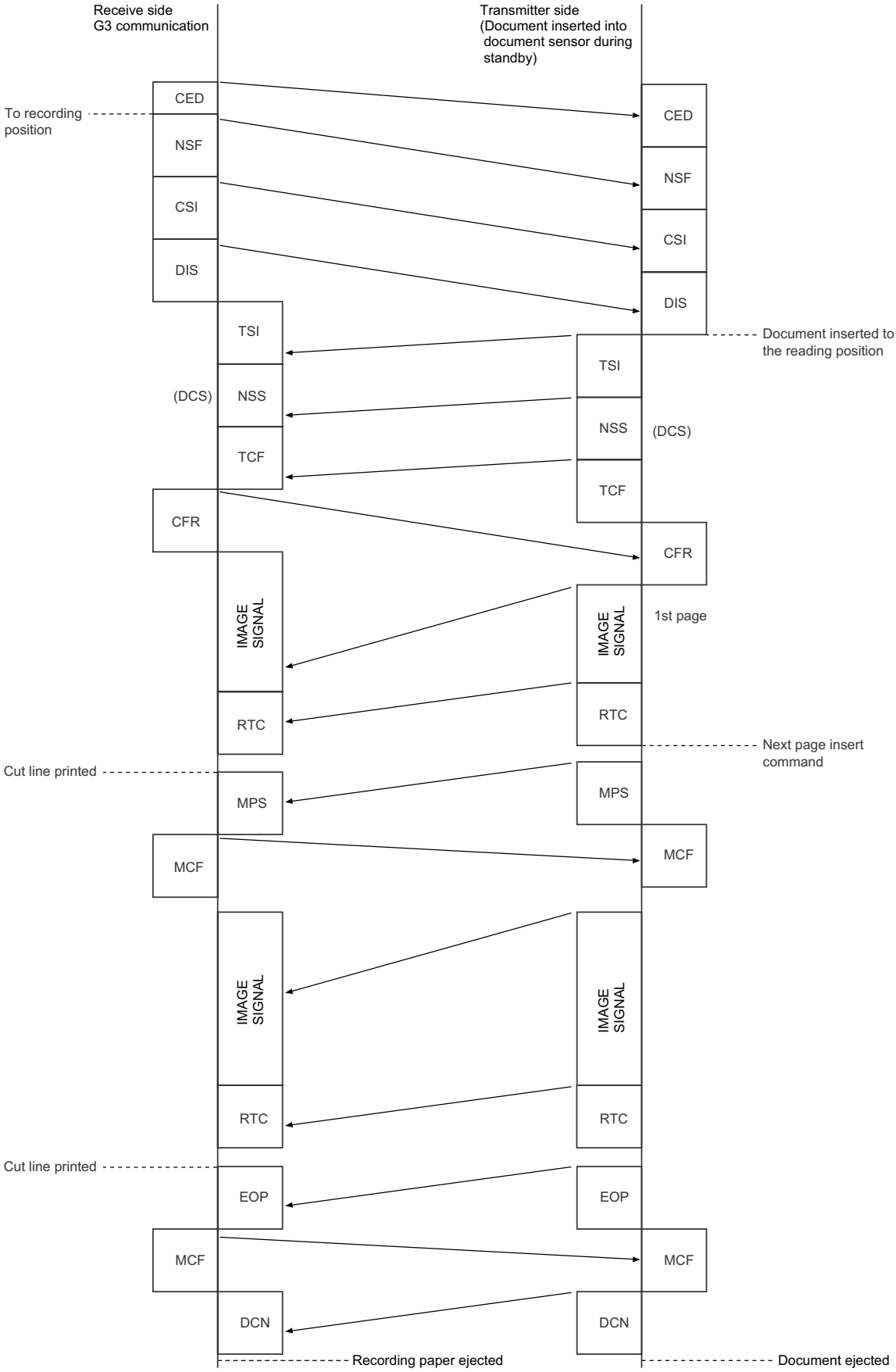


3. Ink PWB parts layout (Bottom side)

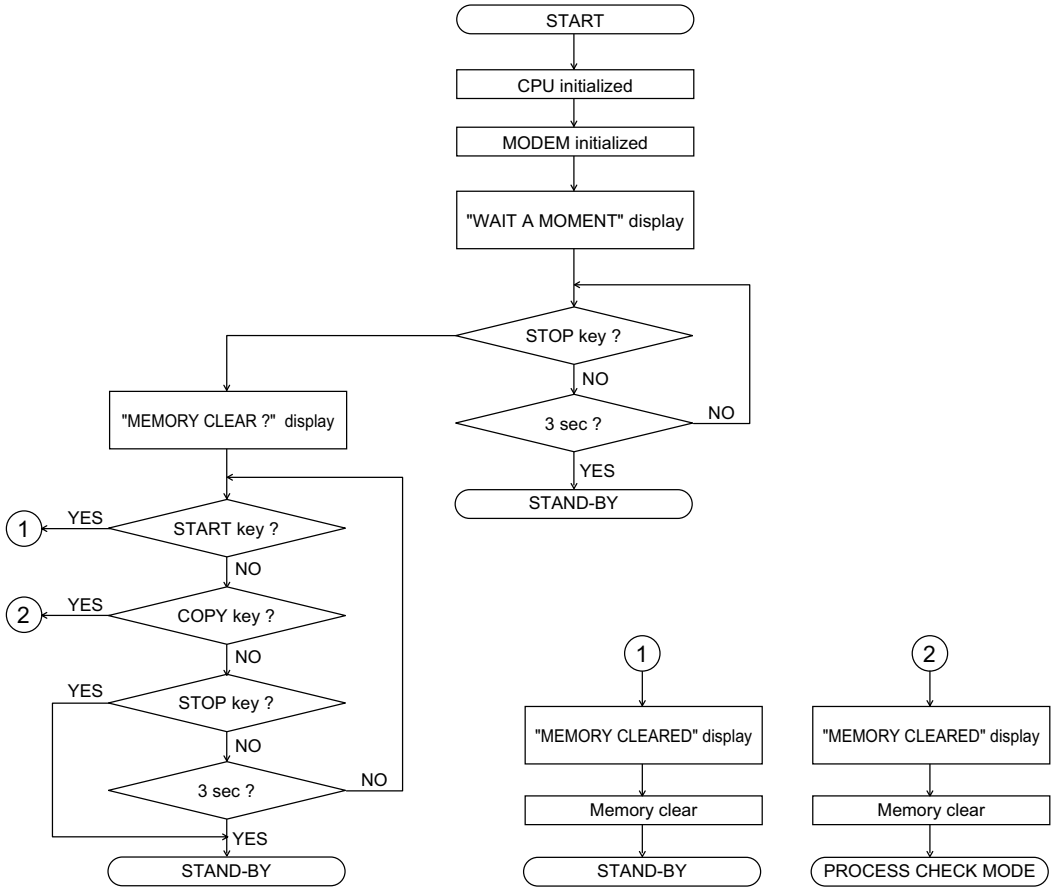


CHAPTER 7. OPERATION FLOWCHART

[1] Protocol



[2] Power on sequence



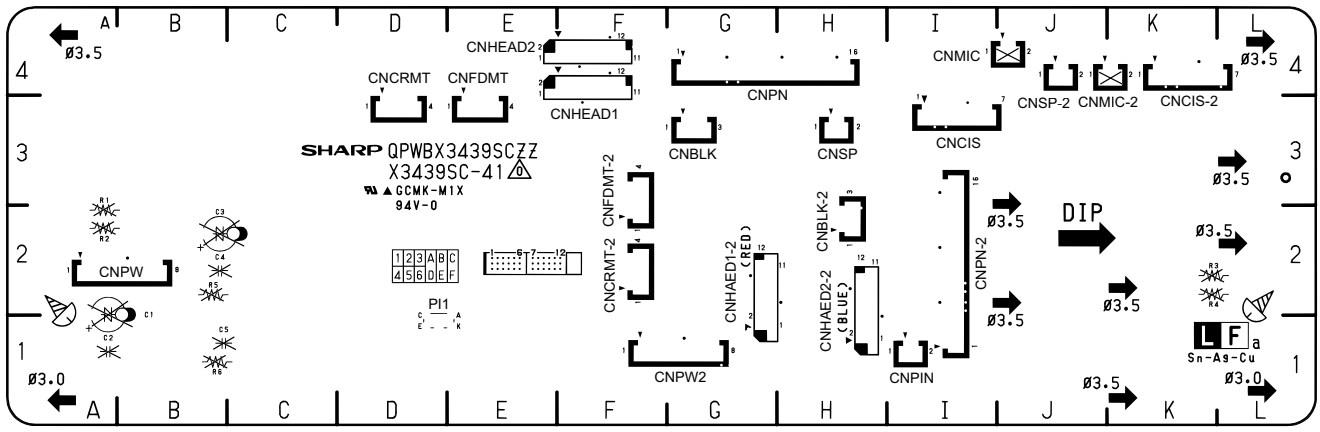
CHAPTER 8. OTHER

[1] Service tools

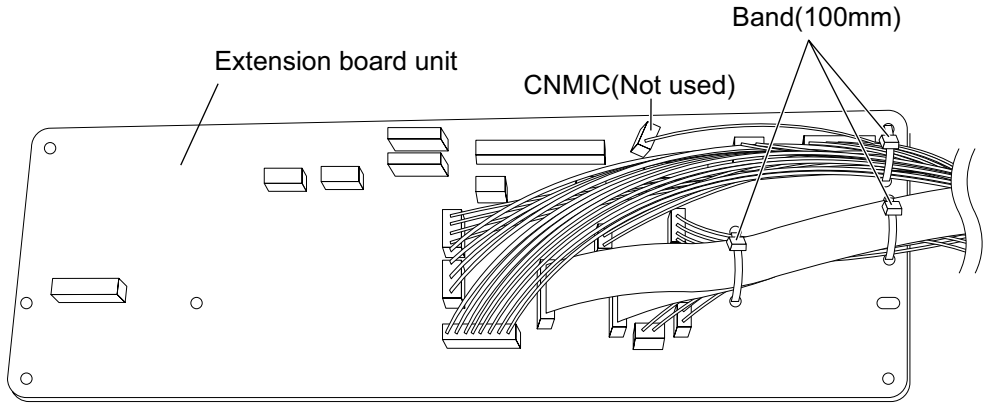
1. List

NO.	PARTS CODE	DESCRIPTION	QTY	PRICE RANK
1	CPWBX3439SC01	Extension board unit	1	CE
2	PSHEZ3579SCZZ	Shading wave memory standard paper	1	AD
3	LBNDJ2006XHZZ	Band(100mm)	3	AA
4	QCNWG223CSCZZ	CIS EXTENSION CABLE (7PIN) [CNCIS/CNCIS-2]	1	AY
5	QCNWG224CSCZZ	PANEL EXTENSION CABLE (16PIN) [CNPN/CNPN-2]	1	BB
6	QCNWG225CSCZZ	SPEAKER EXTENSION CABLE (2PIN) [CNSP/CNSP-2]	1	AR
7	QCNWG232CSCZZ	BLK EXTENSION CABLE (3PIN) [CNBLK/CNBLK-2]	1	AS
8	QCNWG233CSCZZ	MIC EXTENSION CABLE (3PIN) [CNMIC/CNMIC-2] (NOT USED)	1	AQ
9	QCNWG226CSCZZ	POWER SUPPLY EXTENSION CABLE (8PIN) [CNPW/CNPW-2]	1	AY
10	QCNWG227CSCZZ	FEED MOTOR EXTENSION CABLE (4PIN) [CNFDMT/CNFDMT-2]	1	AU
11	QCNWG228CSCZZ	CARRIER MOTOR EXTENSION CABLE (4PIN) [CNCRMT/CNCRMT-2]	1	AU
12	QCNWG229CSCZZ	INK 1 EXTENSION CABLE (12PIN) [CNHEAD1/CNHEAD1-2]	1	AY
13	QCNWG230CSCZZ	INK 2 EXTENSION CABLE (12PIN) [CNHEAD2/CNHEAD2-2]	1	AY
14	QCNWG231CSCZZ	PIN EXTENSION CABLE (2PIN) [CNPIN]	1	AX

1.1. Extension board unit



1.2. Position of band



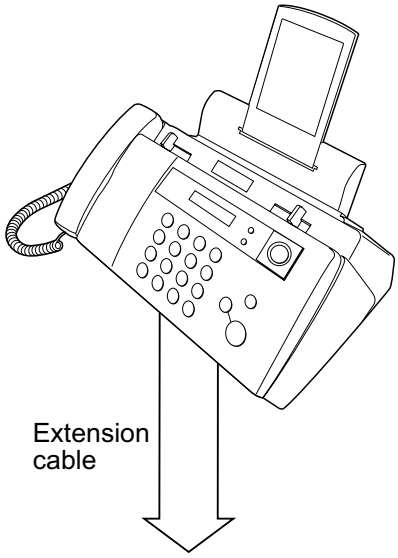
2. Relay board unit

2.1. Relay board unit

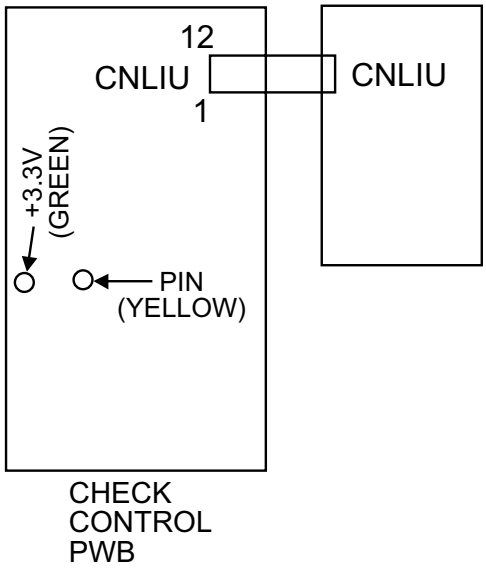
1. Remove the LIU, Control PWB and Power Supply PWB from this unit, and mount the board unit instead.

   Before connecting the wiring to the relay board unit, set the test PWB switches to the fixed position.

2. The setting is as follows.

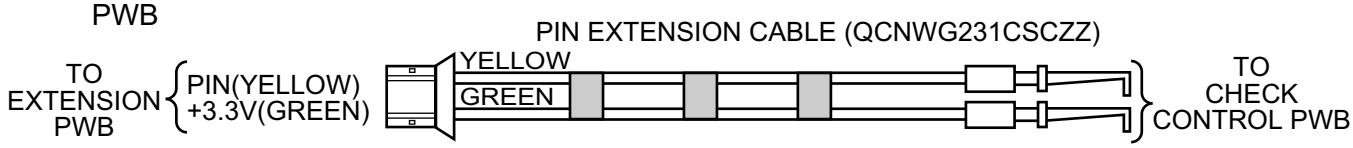


· The extension cables are used as one pair.
· The hook switch is manually operated.



The hook switch is operated by the mechanical unit switch and the test PWB switch. When performing installation in the machine unit, set the test PWB switches to the fixed position.

	Mechanical unit	PWB to be tested
	Actual operation with mechanical unit	
Hook SW	ON/OFF operation	ON-HOOK
	PWB sensor check	
Hook SW	ON-HOOK	ON/OFF operation



3. Shading paper

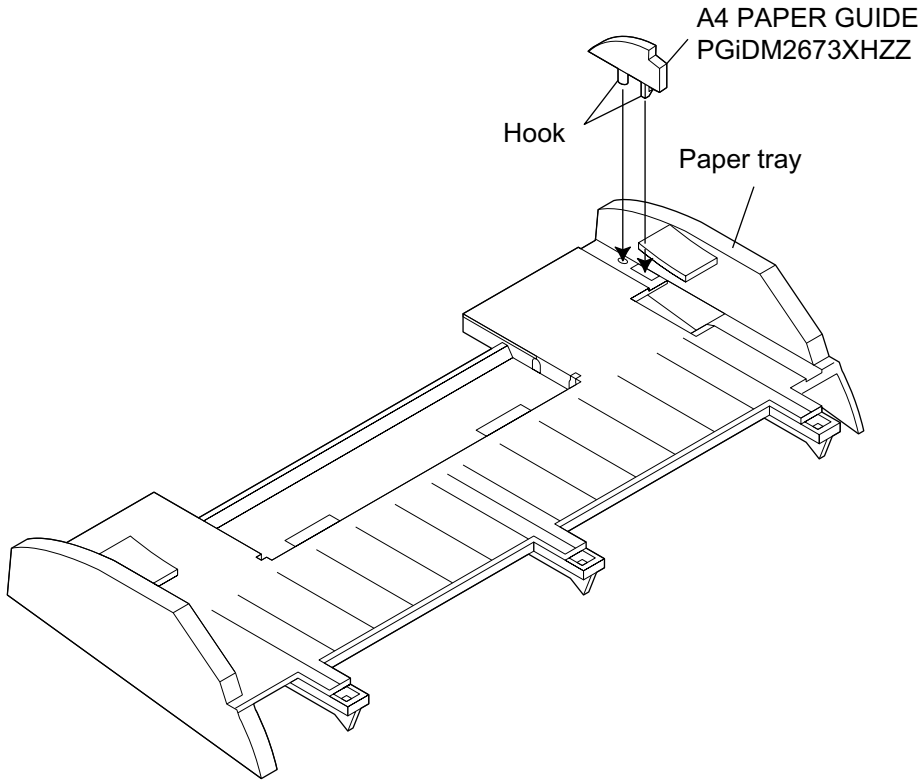
- The white and black basis is applied to remember the shading waveform. Be sure to perform this operation when replacing the battery or replacing the control PWB. Execute in the shading mode of DIAG mode.

SHADING WAVE MEMORY STANDARD PAPER (PSHEZ3579SCZZ)

[2] Changing the record paper size

1. How to change the A4 size and letter size of the record papers

1) It becomes the record paper of the A4 size by installing A4 paper guide (PGiDM2673XHZZ)
which shows in the drawing. Remove A4 paper guide when you use the record paper of the letter size.



2) Set soft switch SW-L2 No.1 and the initialization of SW-L2 No.2 as follows.

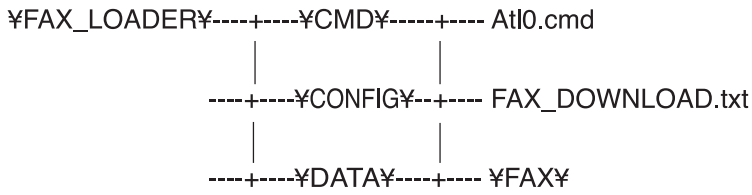
SW NO.	DATA NO.	ITEM	Switch setting and function				Initial setting	Remarks
			1		0			
SW		Paper set size		LETTER	LEGAL	A4		OPTION
l	1		No. 1	0	0	1	0	
L2	2		No. 2	0	1	0	0	

[3] Rewriting version up the FLASH ROM

1. Step 1 File setting (1)

Execute “FAX_LOADER.EXE” and extract the compressed file.

File contents:



2. Step 2 File setting (2)

Copy the downloaded file (ﾒ .VER) to ¥FAX_LOADER¥DATA¥FAX¥ in the default directory (given directory).

3. Step 3 Flash rewriting

Description for application is detailed in the attached document below.

• Rewriting the flash for the FAX engine (with software (Tera Term) for the PC)

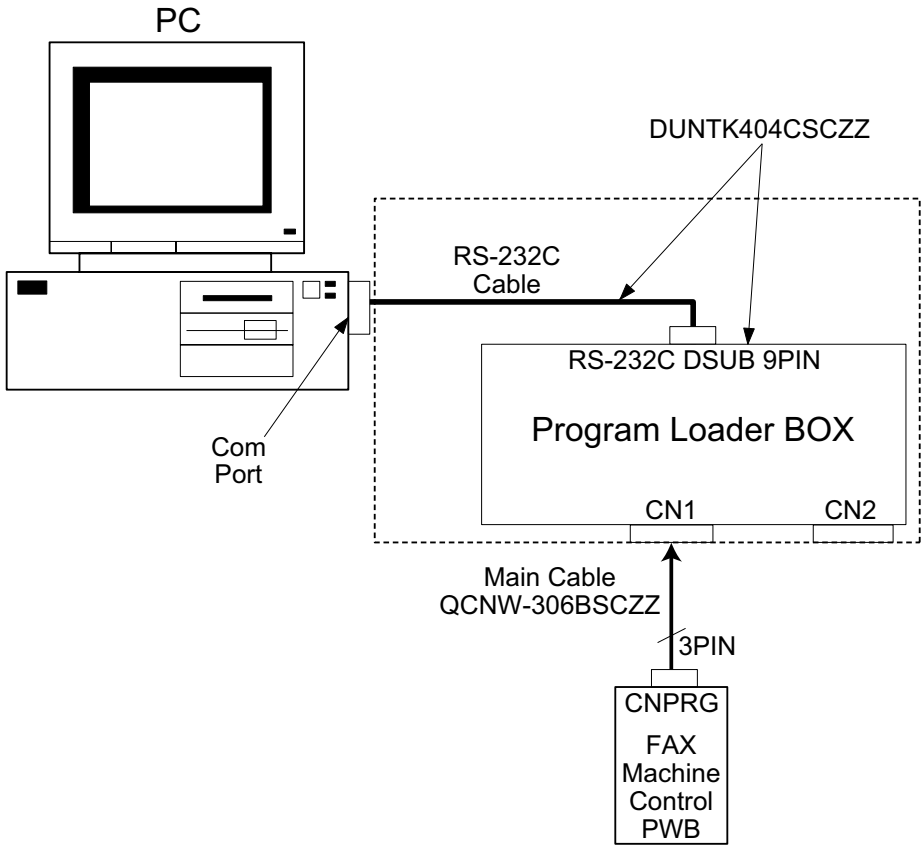


Fig. 1 Connected chart

PARTS CORD	PRICE RANK	NAME	REMARKS
DUNTK404CSCZZ	DG	Program loader BOX	Includes RS-232C cable
QCNW-306BSCZZ	BF	Main cable	Connects Program loader BOX and FAX machine.

Table 1. Program loader unit

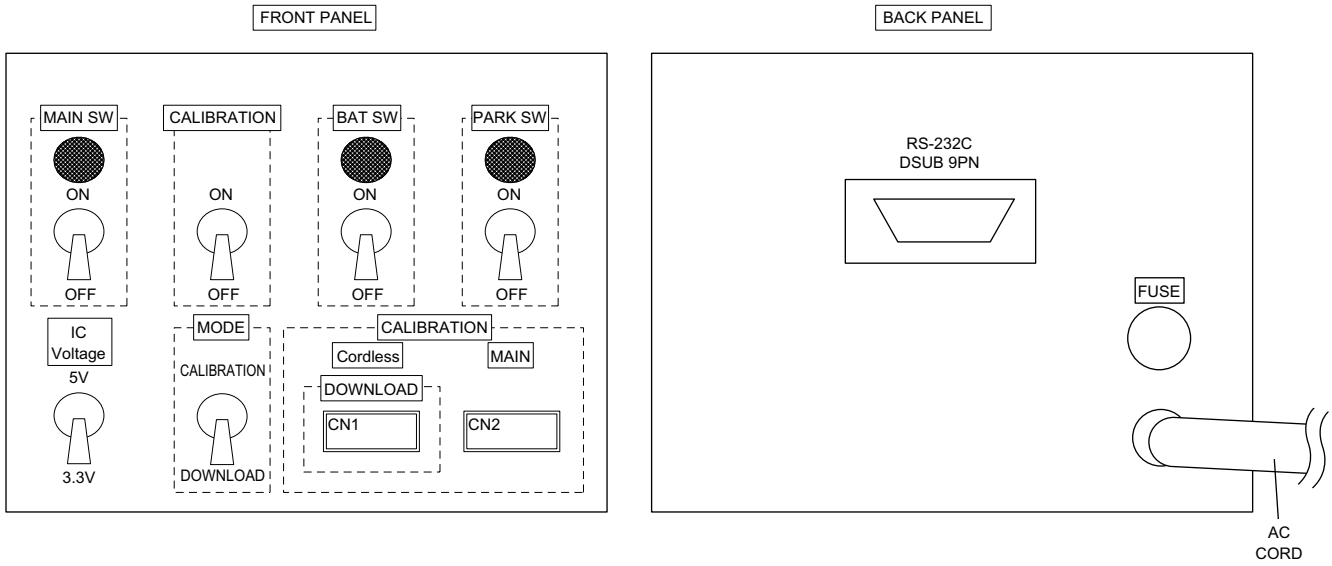


Fig. 2. Program loader BOX

	(1) Before connecting the PC and Program loader BOX with RS-232C cable.	(2) After connecting the PC and Program loader BOX with RS-232C cable. (1*)	(3) Power supply to the FAX machine.	(4) Connect Program loader BOX and the Control PWB of the FAX machine (CNPRG) with Main cable. (3*)
FAX PWB rewriting	Set the switches of Program loader BOX as follows. (a) MAIN SW OFF (down) (b) CALIBRATION OFF (down) (c) BATSW OFF (down) (d) PARK SW OFF (down) (e) IC Voltage to 3.3V (down) (f) MODE to DOWNLOAD (down)	Set the switch of Program loader BOX as follows. (g) MAIN SW ON (up)	Plug the power cable of the FAX machine to the outlet. (2*)	—

Table 2. Program loader BOX connection procedures

1*: Connect one end of RS-232C cable to the COM port of the PC and the other end to RS-232C DSUB 9PIN of Program loader BOX.

2*: Press and hold down the keys 1 and 3 simultaneously while turning on the FAX machine and until “DOWNLOAD MODE” appears.

3*: Perform the procedure (3) before (4). (Turn on the Program loader BOX and the FAX machine before connecting Main cable and the FAX machine.)

Connect one end of Main cable to the connector of the Control PWB connector for the FAX machine (CNPRG) (refer to Fig. 3), and the other end to CN1 of Program loader BOX.

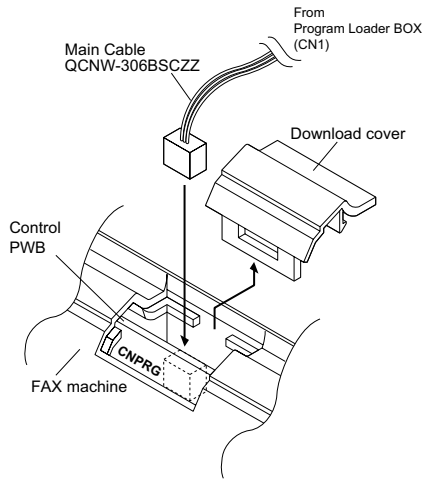


Fig. 3. Connection of Main cable

4. Using software for the PC (Tera Term)

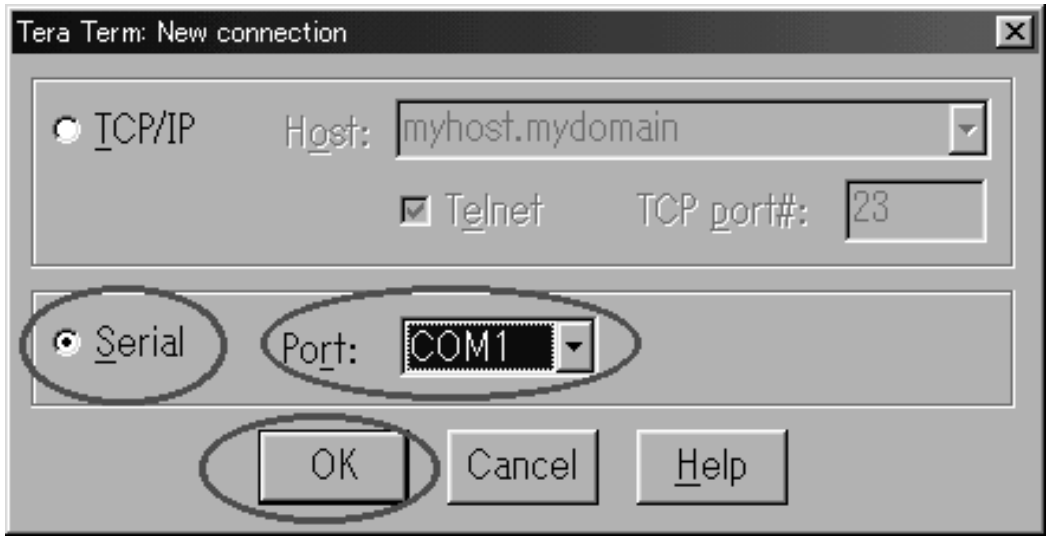
Uncompress the compressed file of Tera Term.

Execute the “SETUP.EXE” from compressed files to install Tera Term.

Execute the “ttermpro.exe” to start Tera Term.

1. Select “New connection” from the pull-down menu of “File”.

1) Check “Serial”.
2) Select the port number in which the RS-232C cable is connected to.
3) Click “OK” for confirmation.



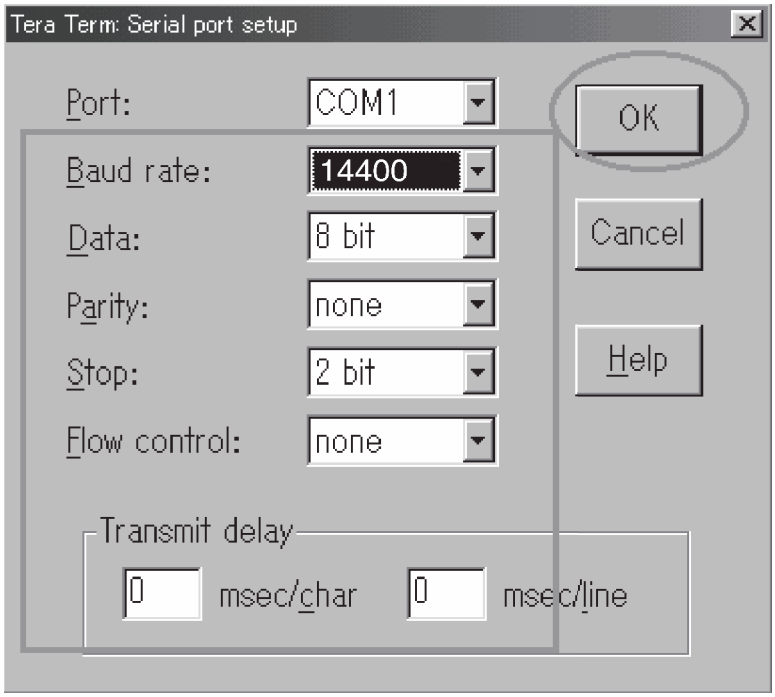
↓

Proceed to 2.

2. Select “Serial port” from the pull-down menu of “Setup”.

Select the port number which the RS-232C cable is connected to.

Set the other parameters as follows and click “OK” for confirmation.



↓

Proceed to 3.

3. Perform procedures described in Table 3.

	(1) Before connecting the PC and Program loader BOX with RS-232C cable.	(2) After connecting the PC and Program loader BOX with RS-232C cable. (1*)	(3) Power supply to the FAX machine.	(4) Connect Program loader BOX and the Control PWB of the FAX machine (CNPRG) with Main cable. (3*)
FAX PWB rewriting	Set the switches of Program loader BOX as follows. (a) MAIN SW OFF (down) (b) CALIBRATION OFF (down) (c) BATSW OFF (down) (d) PARK SW OFF (down) (e) IC Voltage to 3.3V (down) (f) MODE to DOWNLOAD (down)	Set the switch of Program loader BOX as follows. (g) MAIN SW ON (up)	Plug the power cable of the FAX machine to the outlet. (2*)	—

Table 3. Program loader BOX connection procedures

1*: Connect one end of RS-232C cable to the COM port of the PC and the other end to RS-232C DSUB 9PIN of Program loader BOX.

2*: Press and hold down the keys 1 and 3 simultaneously while turning on the FAX machine and until “DOWNLOAD MODE” appears.

3*: Perform the procedure (3) before (4). (Turn on the Program loader BOX and the FAX machine before connecting Main cable and the FAX machine.)
Connect one end of Main cable to the connector of the Control PWB connector for the FAX machine (CNPRG) (refer to Fig. 3), and the other end to CN1 of Program loader BOX.

After performing procedures described in Table 3, press down the START key on the FAX machine.

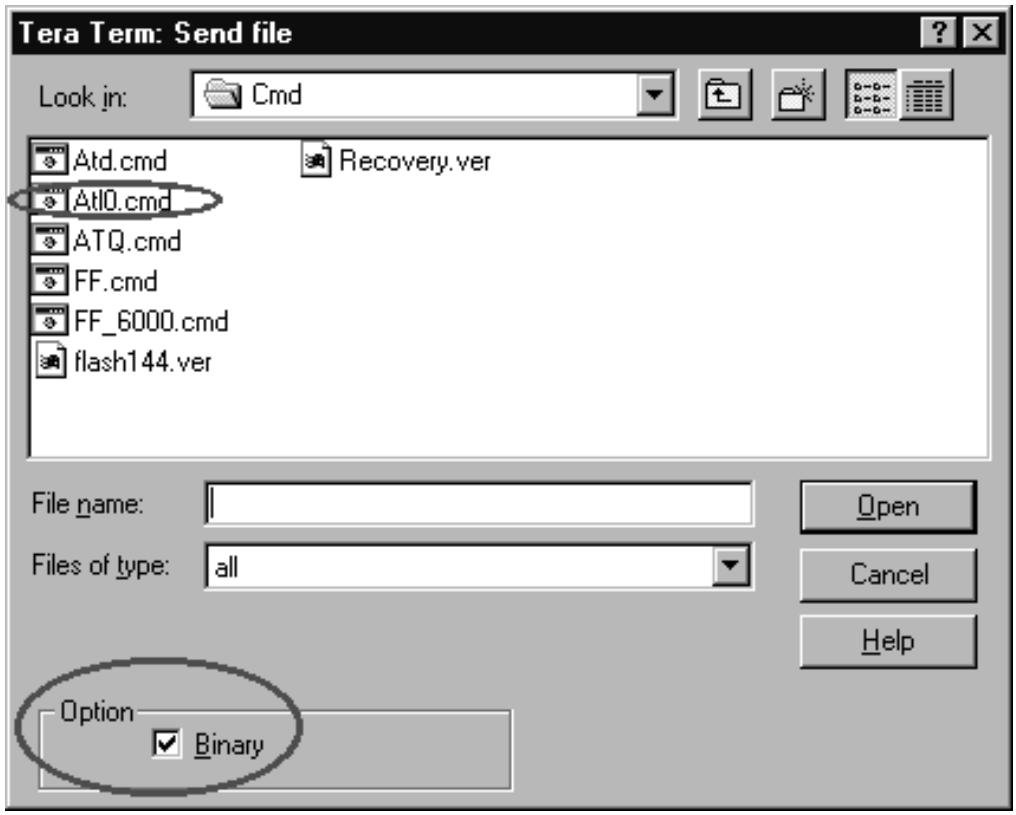
“DOWNLOAD MODE WT” appears on the LCD.

↓

Proceed to 4.

4. Select “Send file” from the pull-down menu of “File”.

Enable the Binary in “Option” and open “Atl0. cmd”.



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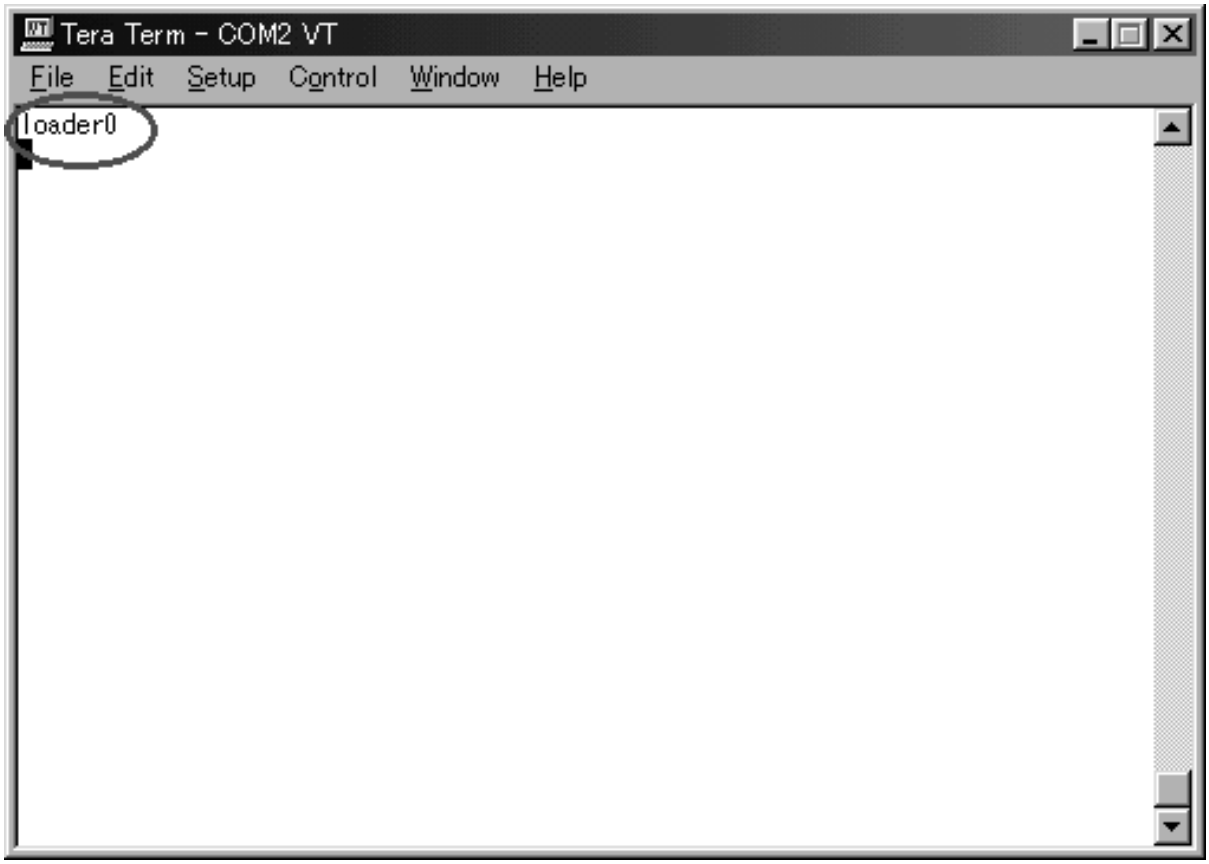
Proceed to 5.

5.



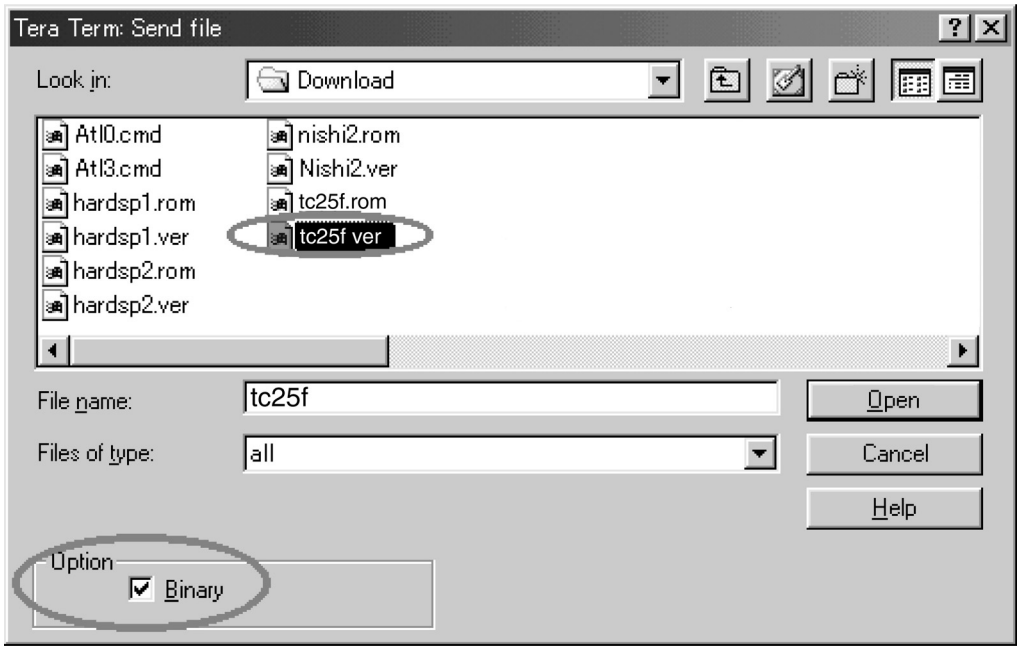
If the description above does not appear, return to 4.

If the description above appears, proceed to 6.

6. Select “Send file” from the pull-down menu of “File”.

Enable the Binary in “Option” and open “ta.ver”.

(Select a file you want to download here.)



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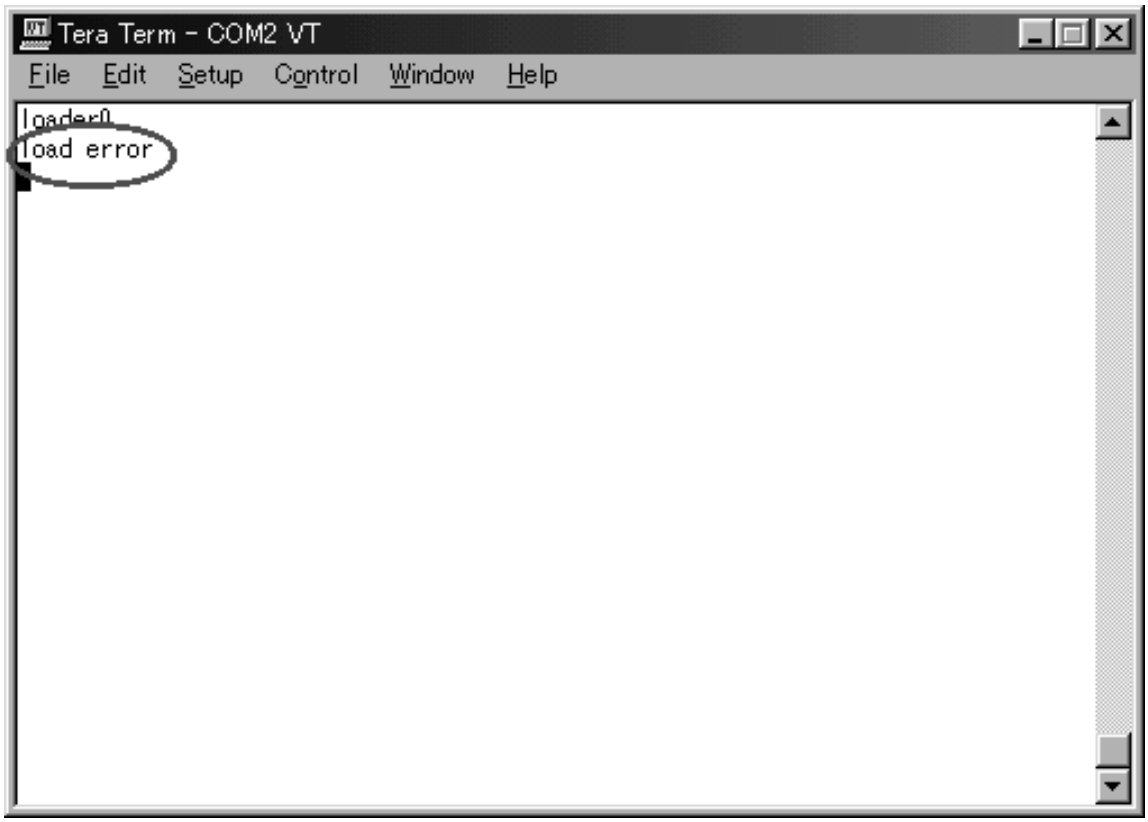
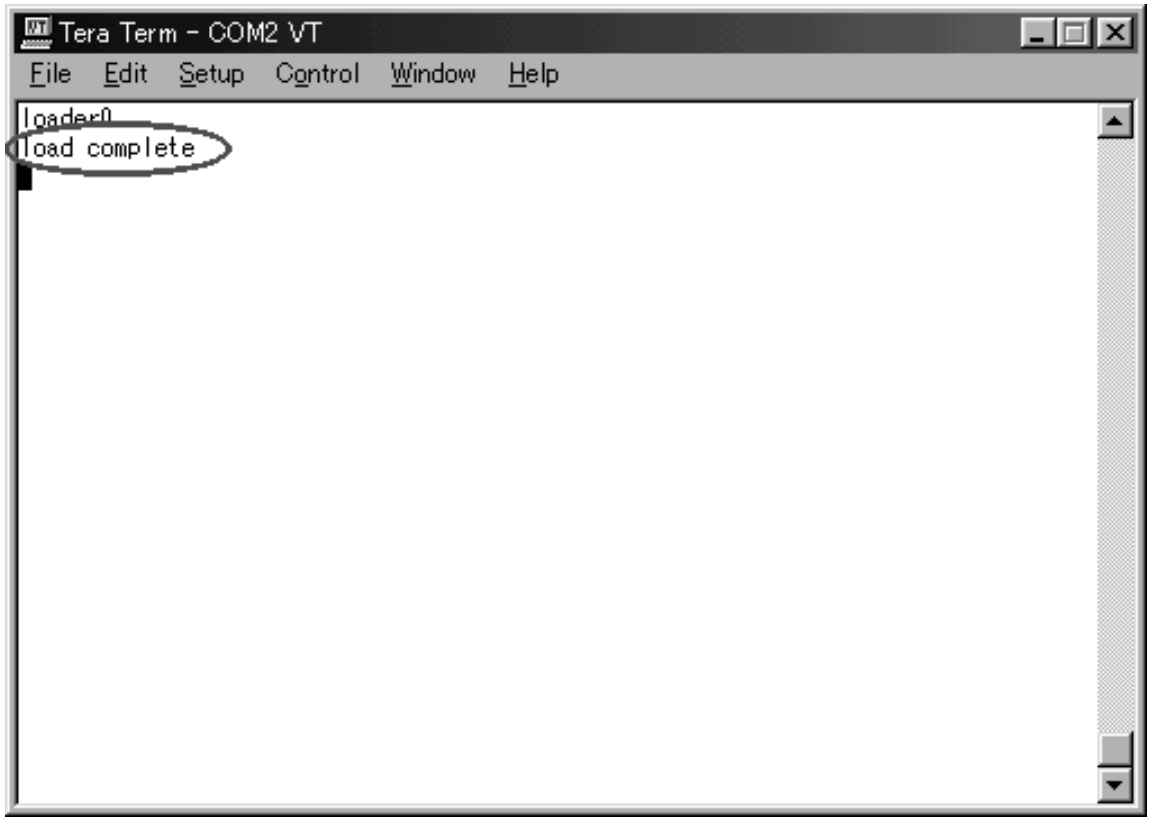
Proceed to 7.

7.



If the description above appears, return to 4.



If the description above appears, downloading was completed normally.

↓

Proceed to 8.

8.

1. To go on to download FLASH ROM, perform the following procedures.

1-1. Only perform procedures (1) and (2) described in Table 4.

1-2. Return to 3.

2. To complete downloading FLASH ROM, perform the following procedures.

2-1. Perform procedures (1) through (3) described in Table 4.

2-2. Terminate “Tera Term”.

	(1) Remove the connector from the Control PWB (CNPRG) of the FAX machine.	(2) Turn off the FAX machine.	(3) Turn off the Program loader BOX.
FAX PWB rewriting	—	Turn off the FAX machine.	Set the switch of Program loader BOX as follows. (a) MAIN SW OFF (down)

Table 4. Termination procedures (1*)

1*. Perform procedures (1) through (3) in numerical order.

SHARP PARTS GUIDE

MODEL UX-B20 UX-B25

MODEL	SELECTION CODE	DESTINATION
UX-B20	U	U.S.A.
UX-B20/B25	C	Canada

CONTENTS

[1] Cabinet,etc.

[2] Operation panel unit/Document guide upper

[3] Packing material & Accessories

[4] Control PWB unit

[5] LIU PWB unit

[6] Power supply PWB unit

[7] Operation panel PWB unit

[8] Ink PWB unit

■ INDEX

Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

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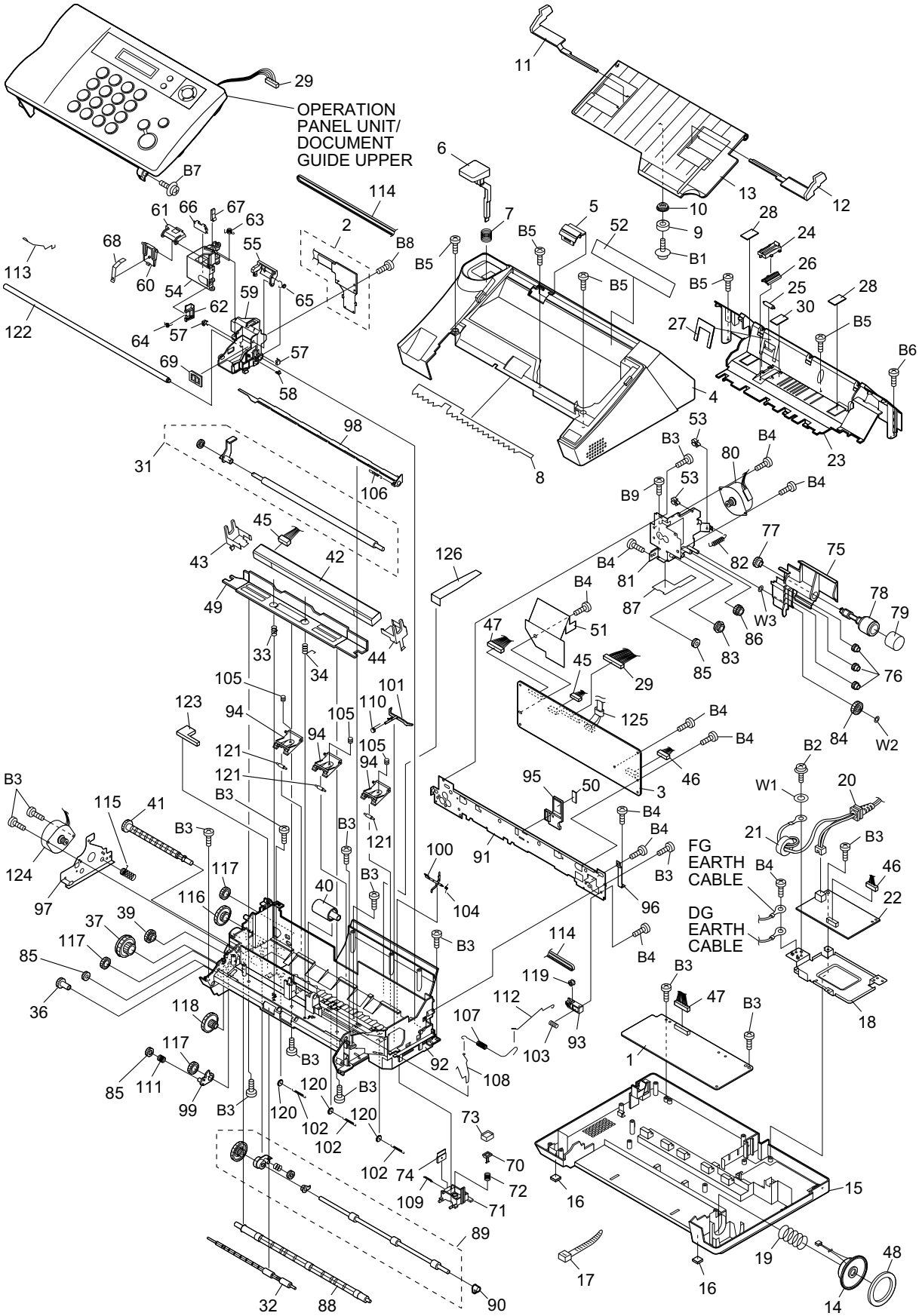
The contents are subject to change without notice.

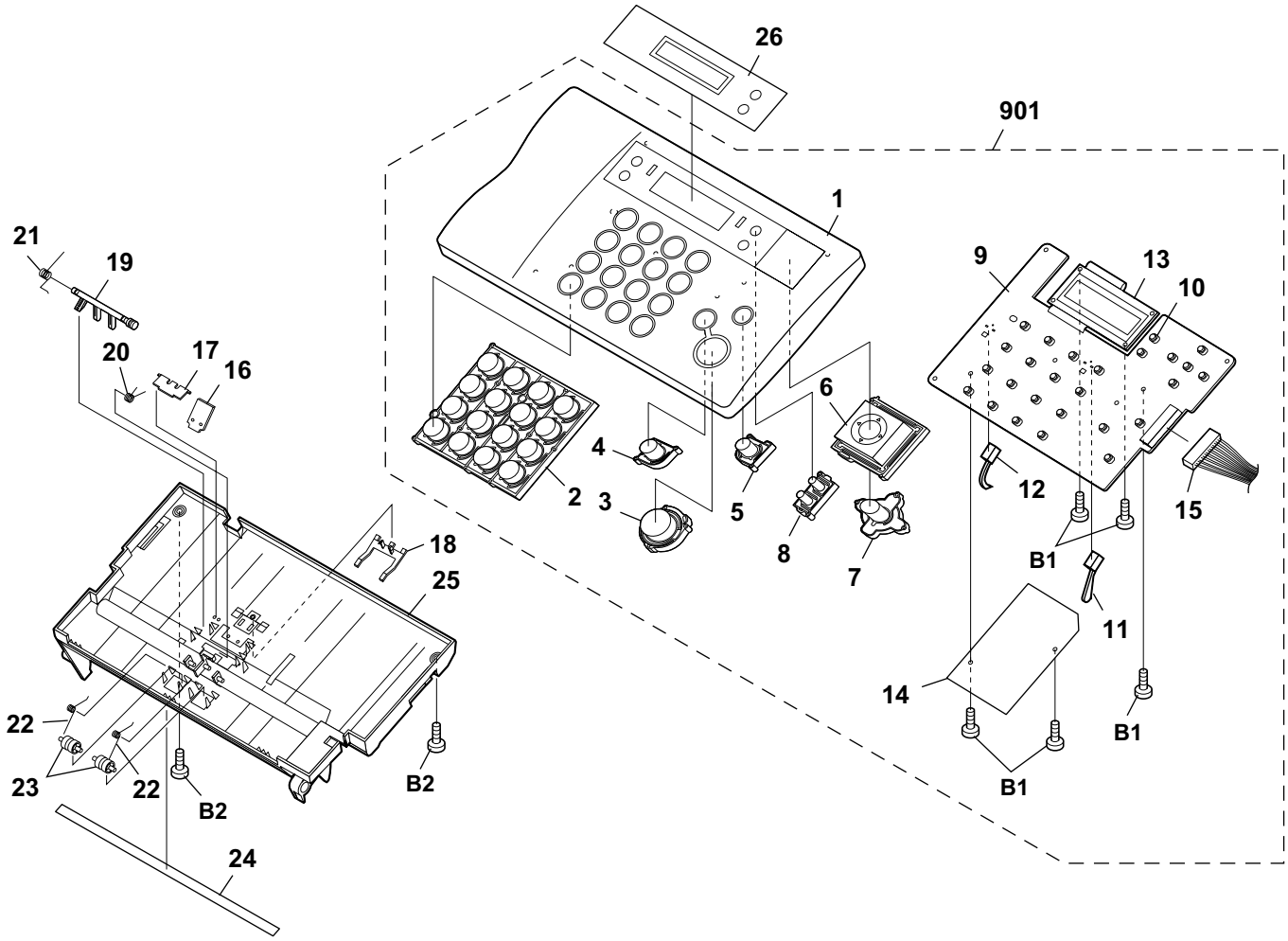
[1] Cabinet,etc.



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[1] Cabinet,etc.					
1	DCEKL253DXH01	BC	N	E	LIU PWB unit
2	DCEKi256DXH01	BG	N	E	Ink PWB unit with FPC
3	DCEKC284TXHZZ	BY	N	E	Control PWB unit(Within ROM) [20U]
3	DCEKC386TXHZZ	BW	N	E	Control PWB unit(Within ROM) [20C/25C]
4	GCABA2440XHSA	AY	N	D	Top cabinet
5	GCOVA2502XHSA	AF	N	C	Download cover
6	MLEVP2395XHSA	AF	N	C	Hook switch lever
7	MSPRC3469XHZZ	AE	N	C	Hook switch lever spring
8	PSHEZ3831XHZZ	AG	N	C	Static sheet
9	PSPO-2023XHZZ	AE	N	C	Hopper cushion
10	NGERP2318XHZZ	AD		C	Pinion gear
11	PGiDM2670XHSA	AF	N	C	Hopper guide,left
12	PGiDM2671XHSA	AG	N	C	Hopper guide,right
13	PGiDM2672XHSA	AQ	N	C	Document guide lower
14	CCNWN202CXH01	AN	N	C	Speaker ass'y
15	GCABB2441XHSA	AY	N	D	Bottom cabinet
16	GLEGG2088XHZZ	AE	N	C	Rubber leg
17	LBNDJ2006XHZZ	AA		C	Band(100mm)
18	LPLTM3317XHZZ	AL	N	C	Shield plate
19	MSPRC3470XHZZ	AF	N	C	Speaker spring
⚠ 20	QACCD2090XHZZ	AS	N	B	AC cord
⚠ 21	RCORF2147XHZZ	AG	N	B	Core
⚠ 22	RDENT2208XHZZ	BG	N	E	Power supply PWB unit
23	GCOVA2501XHSA	AS	N	C	ASF cover [20U]
23	GCOVA2501XHSB	AS	N	C	ASF cover [20C/25C]
24	LPLTP3321XHZZ	AE	N	C	Housing buckler B
25	NROLP2492XHZZ	AT		C	Idler roller
26	PGUMS2196XHZZ	AG		C	Housing buckler rubber
27	PSHEZ3817XHZZ	AF	N	C	Friction pad
28	PSHEZ3828XHZZ	AF	N	C	ASF cover sheet
29	QCNWN498BXHZZ	AR	N	C	Panel cable
30	PSHEZ3842XHZZ	AF	N	C	Backler sheet
31	CROLR2518XH01	AX	N	C	Back roller ass'y
32	CROLP2499XH01	AM		C	Exit roller ass'y
33	MSPRC3488XHZZ	AE	N	C	CIS spring,left
34	MSPRC3489XHZZ	AE	N	C	CIS spring,right
36	NGERH2636XHZZ	AF	N	C	Document PO gear,21Z
37	NGERH2637XHZZ	AF	N	C	Reduction gear,25/50Z
39	NGERH2639XHZZ	AF	N	C	Reduction gear,16/28Z
40	NROLR2483XHZZ	AL		C	Paper feed roller
41	NSFTP2385XHZZ	AF	N	C	Paper feed shaft
42	RUNTZ2145XHZZ	BN		B	CIS unit
43	LHLDZ2276XHZZ	AF	N	C	CIS holder,left
44	LHLDZ2277XHZZ	AF	N	C	CIS holder,right
45	QCNWN499BXHZZ	AP	N	C	CIS cable
46	QCNWN200CXHZZ	AL	N	C	Power supply cable
47	QCNWN201CXHZZ	AP	N	C	LIU cable
48	PSPO-2022XHZZ	AG	N	C	Speaker cushion
49	LPLTP3334XHZZ	AL	N	C	CIS plate
50	PTPEH2114XHZZ	AC	N	C	FFC tape
51	PSHEZ3840XHZZ	AF	N	C	Control PWB protect sheet
52	TLABH441HXHZZ	AE	N	D	Ink exchange label
53	LHLDW2290XHZZ	AE	N	C	Cable clip
54	GCOVA2465XHZA	AL		C	C/T front cover
55	GCOVA2466XHZZ	AG		C	C/T top cover
57	LHLDZ2221XHZZ	AD		C	FPC stopper,side
58	LHLDZ2222XHZZ	AD		C	FPC stopper,bottom
59	LHLDZ2245XHZA	AM		C	Carrier
60	LHLDZ2246XHZZ	AE		C	C/T front holder
61	LHLDZ2247XHZZ	AG		C	C/T top holder
62	MLEVP2377XHZZ	AE		C	C/T lock lever
63	MSPRD3382XHZZ	AE		C	Front cover spring
64	MSPRD3383XHZZ	AE		C	Lock lever spring
65	MSPRD3413XHZZ	AE		C	Top cover spring
66	MSPRP3279XHZZ	AE		C	C/T lock spring
67	MSPRP3384XHZZ	AG		C	C/T side spring
68	MSPRP3388XHZZ	AE		C	Top holder spring
69	PGUMS2188XHZZ	AC		C	Support rubber
70	LHLDZ2215XHZZ	AE		C	Cap holder
71	LHLDZ2278XHZZ	AG	N	C	Sled holder
72	MSPRC3362XHZZ	AD		C	Cap spring
73	PCAPH2090XHZZ	AE		C	Cap
74	PGUMM2189XHZZ	AE		C	Wiper
75	LFRM-2258XHZZ	AL	N	C	Pick roller frame
76	NGERH2564XHZZ	AE		C	Gear,pick A
77	NGERH2565XHZZ	AE		C	Gear,pick B
78	NROLP2478XHZZ	AE		C	Pickup roller
79	PGUMR2186XHZA	AG	N	C	Pick tire
80	CMOTZ2192XH01	AX	N	B	Carrier motor ass'y
81	LPLTM3328XHZZ	AX	N	C	ASF frame
82	MSPRC3465XHZZ	AE	N	C	Pick spring
83	NGERH2392XHZZ	AC		C	Reduction gear,17/21Z
84	NGERH2563XHZZ	AE		C	Gear,ASF D
85	NGERH2611XHZZ	AE		C	Idler gear,18Z

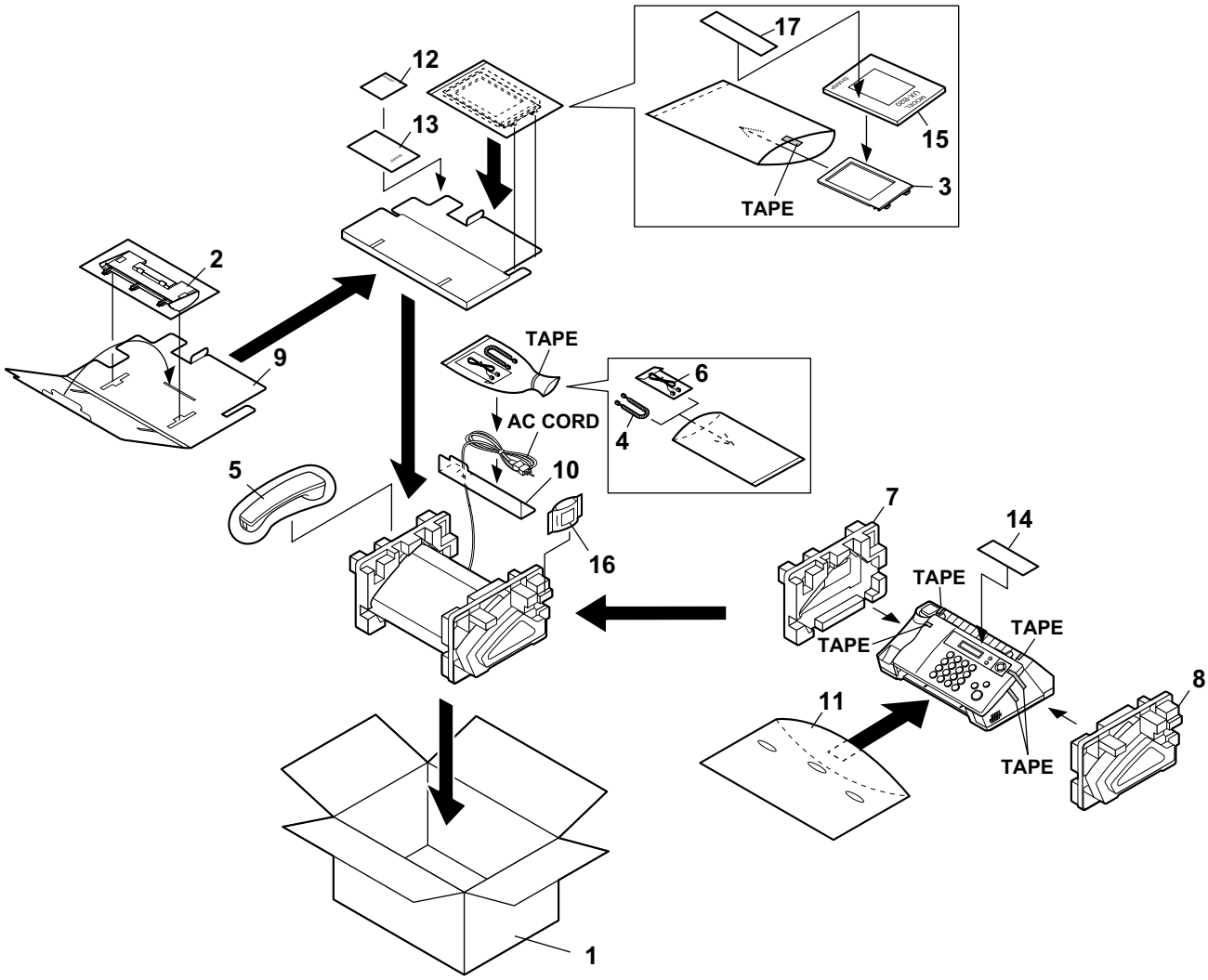
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[1] Cabinet,etc.					
86	NGERH2633XHZZ	AF	N	C	ASF gear,22/23Z
87	PSHEZ3829XHZZ	AF	N	C	Insulation sheet
88	CROLP2517XH01	AX	N	C	Exit roller ass'y
89	CROLR2516XH01	AX	N	C	Feed roller ass'y
90	LBSHP2157XHZZ	AE	N	C	Roller bearing
91	LCHSM2078XHZZ	AP	N	C	Frame chassis
92	LFRM-2257XHZZ	AY	N	C	Main frame
93	LHLDZ2291XHZZ	AE	N	C	Idler Holder
94	LHLDZ2275XHZZ	AF	N	C	Press roller holder
95	LHLDZ2288XHZZ	AF	N	C	FFC clamper
96	LPLTM3316XHZZ	AF	N	C	Earth plate
97	LPLTM3329XHZZ	AX	N	C	Motor heat sink
98	MARMP2036XHZZ	AF	N	C	Change arm
99	MARMP2037XHZZ	AE	N	C	Friction arm
100	MLEVP2396XHZZ	AF	N	C	Sensor lever
101	MLEVP2397XHZZ	AF	N	C	Latch lever
102	MSPRC3360XHZZ	AE		C	Star wheel spring
103	MSPRC3387XHZZ	AD		C	Idler pulley spring
104	MSPRC3458XHZZ	AE	N	C	Sensor lever spring
105	MSPRC3459XHZZ	AE	N	C	Press roller spring
106	MSPRC3460XHZZ	AE	N	C	Change arm spring
107	MSPRC3461XHZZ	AE	N	C	Earth spring 2
108	MSPRC3462XHZZ	AE	N	C	Earth spring 1
109	MSPRC3463XHZZ	AE	N	C	Sled spring
110	MSPRC3464XHZZ	AE	N	C	Latch lever spring
111	MSPRC3490XHZZ	AE	N	C	Friction arm spring
112	MSPRK3503XHZZ	AF	N	C	Carrier spring,right
113	MSPRK3502XHZZ	AF	N	C	Carrier spring,left
114	NBLTT2065XHZZ	AR	N	C	Carrier belt
115	MSPRC3457XHZZ	AE	N	C	Feed gear spring
116	NGERH2634XHZZ	AF	N	C	Reduction gear 1,29/67Z
117	NGERH2638XHZZ	AF	N	C	Idler gear,26Z
118	NGERH2643XHZZ	AF	N	C	Exit roller gear,17/60Z
119	NPLYD2095XHZZ	AE		C	Idler pulley
120	NROLM2480XHZZ	AE		C	Star wheel
121	NROLP2477XHZZ	AE		C	Press roller
122	NSFTM2384XHZZ	AR	N	C	Carrier shaft
123	PFLT-2030XHZZ	AE	N	C	Ink felt
124	RMOTS2193XHZZ	AX	N	B	Feed motor
⚠ 125	RCORF0049CFZZ	AR		B	Core
126	PSHEZ3841XHZZ	AF	N	C	ASF guide sheet
B1	LX-BZ2308XHZZ	AE	N	C	Screw with washer(3x10)
B2	LX-BZ2282XHZZ	AB		C	Screw with washer(4x6)
B3	XEBS730P10000	AC		C	Screw(3x10)
B4	XHBS730P06000	AC	N	C	Screw(3x6)
B5	XEBS730P12000	AC		C	Screw(3x12)
B6	XHBS730P10000	AD		C	Screw(3x10)
B7	LX-BZ2205XHZZ	AC		C	Screw(3x10)
B8	XEPS726P04000	AD	N	C	Screw(2.6x4)
B9	XUPSD30P10XS0	AA	N	C	Screw(3x10)
W1	XWHSN40-08100	AA		C	Washer
W2	LX-WZ2273XHZZ	AE	N	C	Washer
W3	LX-WZ2309XHZZ	AE	N	C	Washer

[2] Operation panel unit/Document guide upper



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[2] Operation panel unit/Document guide upper					
1	GCASP2187XHSA	AW	N	D	Panel case
2	JBTN-2463XHSA	AL	N	C	12 key
3	JBTN-2464XHSA	AG	N	C	Start key
4	JBTN-2465XHSA	AF	N	C	Stop key
5	JBTN-2466XHSA	AF	N	C	Copy key
6	JBTN-2467XHSA	AF	N	C	Function key
7	JBTN-2468XHSA	AL	N	C	Cursol key
8	JBTN-2469XHSA	AP	N	C	Ink set key
9	DCEKP255DXH01	BF	N	E	Operation panel PWB unit
10	QSW-K0005AWZZ	AC		C	Tact switch [SW]
11	QSW-M2246AXZZ	AH		C	FRSNS sensor [SW1]
12	QSW-M2294XHZZ	AE		C	ORGSNS sensor [SW2]
13	RUNTZ2080XH02	BA		B	LCD unit
14	PSHEZ3830XHZZ	AE	N	C	Protection sheet
15	QCNWN498BXHZZ	AR	N	C	Panel cable
16	LPLTG3311XHZZ	AF	N	C	Separate rubber
17	LPLTP3312XHZZ	AE	N	C	Separate plate
18	LPLTP3313XHZZ	AE	N	C	Paper feed plate
19	LPLTP3314XHZZ	AE	N	C	Sub feed plate
20	MSPRC3455XHZZ	AE	N	C	Separate spring
21	MSPRC3456XHZZ	AE	N	C	Sub feed spring
22	MSPRD3495XHZZ	AE	N	C	PO pinch roller spring
23	NRÖLP2332XHZZ	AD		C	PO pinch roller
24	PBRS-2066XHZZ	AV	N	C	Static brush
25	PGiDM2669XHZZ	AS	N	C	Document guide upper
26	HPNLH2444XHSA	AL	N	D	Decoration panel [20U/C]
26	HPNLH2444XHSF	AL	N	D	Decoration panel [25C]
B1	XEBS720P06000	AC		C	Screw(2x6)
B2	XEBS730P10000	AC		C	Screw(3x10)
	(Unit)				
901	DCEKP254DXH01	BL	N	E	Operation panel unit

[3] Packing material & Accessories



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[3] Packing material & Accessories						
1	CPAKC448FXH01	AZ	N	D	Packing case with label	[20U]
1	SPAKC482FXHTZ	AS	N	D	Packing case	[20C]
1	CPAKC202GXH01	BA	N	D	Packing case with label	[25C]
2	LPLTP3318XHZZ	AP	N	D	Paper tray	
3	CPLTP3222XHR3	BA	N	D	Paper tray extension ass'y	
⚠ 4	QCNWG209BXHGR	AN		C	Handset cord	
5	DUNTK245DXHGY	BA	N	E	Handset	
⚠ 6	QCNWG370BXHZZ	AL		C	Telephone line cord	
7	SPAKA446FXHZZ	AH	N	D	Packing add.,left	
8	SPAKA447FXHZZ	AH	N	D	Packing add.,right	
9	SPAKA450FXHZZ	AK	N	D	Pad,A	
10	SPAKA451FXHZZ	AE	N	D	Pad,B	
11	SPAKP449FXHZZ	AG	N	D	Vinyl cover	
12	TCADH3685XHZZ	AE	N	D	Setup guide	[20U]
13	TCADZ2891XHZZ	AF		D	Registration card	[20U]
14	TCADZ3683XHZZ	AG	N	D	Pop card(English)	[20U]
14	TCADZ3700XHZZ	AG	N	D	Pop card(English)	[20C/25C]
15	TiNSE4427XHTZ	AQ	N	D	Operation manual	[20U]
15	TiNSK4436XHTZ	AZ	N	D	Operation manual	[20C/25C]
16	UiNK-2034XHZZ	AE		S	Print cartridge(Intial cartridge)	
17	TCADZ3701XHZZ	AG	N	D	Pop card(French)	[20C/25C]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[4] Control PWB unit						
1	UBATL2049SCZZ	AF		B	Battery(CR2032T23)	[BAT1]
2	VCEAGA1HW226M	AB		C	Capacitor(50WV 22μ F)	[C3]
3	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C4]
4	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C5]
5	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C6]
6	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C7]
7	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C8]
8	VCEAGA1EW476M	AA		C	Capacitor(25WV 47μ F)	[C9]
9	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C13]
10	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C14]
11	VCEAGA1HW226M	AB		C	Capacitor(50WV 22μ F)	[C15]
12	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C16]
13	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C18]
14	VCKYTV1AF106Z	AC		C	Capacitor(10WV 10μ F)	[C22]
15	VCEAGA1HW107M	AA		C	Capacitor(50WV 100μ F)	[C23]
16	VCEAGA1HW476M	AB		C	Capacitor(50WV 47μ F)	[C24]
17	VCEAGA1HW476M	AB		C	Capacitor(50WV 47μ F)	[C25]
18	VCKYCY1HB103K	AA		C	Capacitor(50WV 0.01μ F)	[C26]
19	VCEAGA1EW476M	AA		C	Capacitor(25WV 47μ F)	[C27]
20	VCEAGA1EW476M	AA		C	Capacitor(25WV 47μ F)	[C28]
21	VCEAGA1EW476M	AA		C	Capacitor(25WV 47μ F)	[C29]
22	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C30]
23	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C31]
24	VCEAGA1EW476M	AA		C	Capacitor(25WV 47μ F)	[C32]
25	VCEAGA1EW476M	AA		C	Capacitor(25WV 47μ F)	[C33]
26	VCCCCY1HH221J	AA		C	Capacitor(50WV 220PF)	[C34]
27	VCKYCY1CB104K	AB		C	Capacitor(16WV 0.1μ F)	[C35]
28	VCEAGA1EW227M	AB		C	Capacitor(25WV 220μ F)	[C37]
29	VCEAGA1HW107M	AA		C	Capacitor(50WV 100μ F)	[C38]
30	VCEAGA1HW226M	AB		C	Capacitor(50WV 22μ F)	[C39]
31	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[C42]
32	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C46]
33	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C47]
34	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C49]
35	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C50]
36	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C51]
37	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C100]
38	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C101]
39	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C102]
40	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C103]
41	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C104]
42	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C105]
43	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C107]
44	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C108]
45	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C109]
46	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C110]
47	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C111]
48	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C112]
49	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C114]
50	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C115]
51	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C116]
52	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C117]
53	VCCCCY1HH100D	AA		C	Capacitor(50WV 10PF)	[C118]
54	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C119]
55	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C123]
56	VCCCCY1HH220J	AA		C	Capacitor(50WV 22PF)	[C124]
57	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C125]
58	VCCCCY1HH180J	AA		C	Capacitor(50WV 18PF)	[C126]
59	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C128]
60	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C129]
61	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C130]
62	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C131]
63	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C133]
64	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C134]
65	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C135]
66	VCKYCY1HB472K	AA		C	Capacitor(50WV 4700PF)	[C136]
67	VCKYCY1CB104K	AB		C	Capacitor(16WV 0.1μ F)	[C137]
68	VCKYCY1HB103K	AA		C	Capacitor(50WV 0.01μ F)	[C138]
69	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C139]
70	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C140]
71	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C142]
72	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C143]
73	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C144]
74	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C145]
75	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C146]
76	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C147]
77	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C148]
78	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C149]
79	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C150]
80	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C151]
81	VCCCCY1HH220J	AA		C	Capacitor(50WV 22PF)	[C152]
82	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C153]
83	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C157]
84	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C160]
85	VCCCCY1HH221J	AA		C	Capacitor(50WV 220PF)	[C161]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[4] Control PWB unit						
86	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C163]
87	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C164]
88	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C165]
89	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C166]
90	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C167]
91	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C168]
92	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C169]
93	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C170]
94	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C171]
95	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C172]
96	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C175]
97	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C176]
98	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C177]
99	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C178]
100	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C179]
101	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C180]
102	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C181]
103	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C182]
104	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C183]
105	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C184]
106	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C185]
107	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C186]
108	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C187]
109	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C188]
110	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C192]
111	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C193]
112	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C194]
113	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C195]
114	VCKYCY1CB104K	AB		C	Capacitor(16WV 0.1μ F)	[C196]
115	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C197]
116	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C206]
117	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C207]
118	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C210]
119	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C211]
120	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C212]
121	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C215]
122	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C218]
123	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C219]
124	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C220]
125	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C222]
126	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C223]
127	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C224]
128	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C225]
129	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C226]
130	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C227]
131	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C228]
132	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C229]
133	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C230]
134	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C231]
135	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C232]
136	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C233]
137	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C234]
138	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C235]
139	VCKYCY1HB471K	AB		C	Capacitor(50WV 470PF)	[C236]
140	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C237]
141	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C238]
142	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C239]
143	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C240]
144	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C241]
145	VCKYTV1AF106Z	AC		C	Capacitor(10WV 10μ F)	[C242]
146	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C243]
147	VCKYCY1CB104K	AB		C	Capacitor(16WV 0.1μ F)	[C250]
148	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C252]
149	VCKYCY1CB104K	AB		C	Capacitor(16WV 0.1μ F)	[C253]
150	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C254]
151	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C255]
152	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C256]
153	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C258]
154	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C259]
155	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C263]
156	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C264]
157	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C265]
158	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C266]
159	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C267]
160	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C268]
161	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C270]
162	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C271]
163	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C279]
164	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C280]
165	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C281]
166	VCKYTV1AF106Z	AC		C	Capacitor(10WV 10μ F)	[C283]
167	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C284]
168	VCKYTV1AF106Z	AC		C	Capacitor(10WV 10μ F)	[C285]
169	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C286]
170	VCCCCY1HH221J	AA		C	Capacitor(50WV 220PF)	[C287]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[4] Control PWB unit						
171	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C288]
172	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[C289]
173	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C290]
174	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[C291]
175	VCCCCY1HH221J	AA		C	Capacitor(50WV 220PF)	[C292]
176	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[C294]
177	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C296]
178	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C297]
179	VCKYCY1HB272K	AB		C	Capacitor(50WV 2700PF)	[C298]
180	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C299]
181	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C300]
182	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C301]
183	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C302]
184	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C303]
185	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C304]
186	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C305]
187	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C311]
188	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C320]
189	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C321]
190	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C322]
191	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C323]
192	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C324]
193	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C325]
194	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C326]
195	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C327]
196	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C328]
197	VCCCCY1HH101J	AA		C	Capacitor(50WV 100PF)	[C329]
198	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C332]
199	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C336]
200	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C337]
201	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C338]
202	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C341]
203	VCKYTV1AF106Z	AC		C	Capacitor(10WV 10μ F)	[C344]
204	VCKYCY1CB104K	AB		C	Capacitor(16WV 0.1μ F)	[C345]
205	VCKYCY1CB104K	AB		C	Capacitor(16WV 0.1μ F)	[C346]
206	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[C349]
207	QCNCM2666XH0G	AE		C	Connector(7pin)	[CNCIS]
208	QCNCM2681XH0D	AD	N	C	Connector(4pin)	[CNCRMT]
209	QCNCM2666XH0D	AD	N	C	Connector(4pin)	[CNFDMT]
210	QCNCW2556SC1B	AG		C	Connector(12pin)	[CNHEAD1]
211	QCNCW2556SC1B	AG		C	Connector(12pin)	[CNHEAD2]
212	QCNCM2666XH1B	AE	N	C	Connector(12pin)	[CNLIU]
213	QCNCM2666XH1F	AF		C	Connector(16pin)	[CNPN]
214	QCNCM2667XH0C	AD	N	C	Connector(3pin)	[CNPRG]
215	QCNCM2666XH0H	AE	N	C	Connector(8pin)	[CNPW]
216	QCNCM2666XH0B	AD		C	Connector(2pin)	[CNSP]
217	VHDSS14////-1	AF		B	Diode(SS14)	[D1]
218	VHDSS14////-1	AF		B	Diode(SS14)	[D2]
219	VHDSS14////-1	AF		B	Diode(SS14)	[D3]
220	VHDSS14////-1	AF		B	Diode(SS14)	[D4]
221	VHDSS14////-1	AF		B	Diode(SS14)	[D5]
222	VHDSS16////-1	AF		B	Diode(SS16)	[D6]
223	VHDSS14////-1	AF		B	Diode(SS14)	[D7]
224	VHDSS14////-1	AF		B	Diode(SS14)	[D8]
225	VHDSS14////-1	AF		B	Diode(SS14)	[D9]
226	VHD1SR154/4-1	AC		B	Diode(1SR154)	[D10]
227	VHD1SS355//-1	AB		B	Diode(1SS355)	[D100]
228	VHDRB715F//-1	AF		B	Diode(RB715F)	[D102]
229	VHD1SS355//-1	AB		B	Diode(1SS355)	[D103]
230	VHD1SS355//-1	AB		B	Diode(1SS355)	[D104]
231	VHD1SS355//-1	AB		B	Diode(1SS355)	[D106]
⚠ 232	QFS-L2016XHZZ	AD		A	IC protector(KAB5002 201)	[FU100]
⚠ 233	QFS-L1027YCZZ	AE		A	IC protector(KAB3202 202)	[FU101]
234	RH-iX2168SCZZ	BB		B	IC(MSM51V4800E)	[IC1]
235	RH-iX2418XHZZ	BA	N	B	IC(M12L16161A-7TG)	[IC3]
236	RH-iX2405XHZZ	BD	N	B	IC(μ PD65945)	[IC4]
237	VHiSCE209L/-1	BK	N	B	IC(SCE209L)	[IC5]
238	VHiNJM2113M-1	AG		B	IC(NJM2113M)	[IC6]
239	VHiF004/TC25F	BA	N	B	IC,FLASH ROM(4MB)(Ver.:TC25F)(20U)	[IC7]
239	VHiF004/TC44B	BA	N	B	IC,FLASH ROM(4MB)(Ver.:TC44B)(20C/25C)	[IC7]
240	VHiPC901054-1	AY		B	IC(PLCC44)	[IC10]
241	RH-iX2383XHZZ	AG	N	B	IC(LM2902NSR)	[IC12]
242	RCiLF2175XHZZ	AL		C	Coil(680μ H)	[L1]
243	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[L100]
244	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[L102]
245	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[L103]
246	VRS-CY1JB150J	AA		C	Resistor(1/16W 15Ω ± 5%)	[L104]
247	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[L105]
248	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[L106]
249	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[L107]
⚠ 250	VHPGP1S094HCZ	AG		B	Photo transistor(GP1S094HCZ)	[PH1]
251	VSRT1N141C/-1	AB		B	Transistor(RT1N141C)	[Q101]
252	VSRT1N141C/-1	AB		B	Transistor(RT1N141C)	[Q102]
253	VS2SA1530AS-1	AC		B	Transistor(2SA1530AS)	[Q105]
254	VS2SC2411KR-1	AC		B	Transistor(2SC2411KR)	[Q108]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[4] Control PWB unit						
255	VRS-HT3DA110J	AE	N	C	Resistor(2W 11Ω ± 5%)	[R1]
256	VRS-CY1JB101J	AA		C	Resistor(1/16W 100Ω ± 5%)	[R2]
257	VRS-CY1JB201J	AA		C	Resistor(1/16W 200Ω ± 5%)	[R3]
258	VRS-HT3AAR91J	AB		C	Resistor(1W 0.91Ω ± 5%)	[R7]
259	VRS-HT3AAR91J	AB		C	Resistor(1W 0.91Ω ± 5%)	[R8]
260	VRS-HT3AAR91J	AB		C	Resistor(1W 0.91Ω ± 5%)	[R10]
261	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ± 5%)	[R11]
262	VRS-CY1JB393J	AA		C	Resistor(1/16W 39KΩ ± 5%)	[R12]
263	VRS-CY1JB393J	AA		C	Resistor(1/16W 39KΩ ± 5%)	[R13]
264	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ± 5%)	[R14]
265	VRS-CY1JB332J	AA		C	Resistor(1/16W 3.3KΩ ± 5%)	[R16]
266	VRS-HT3AAR91J	AB		C	Resistor(1W 0.91Ω ± 5%)	[R17]
267	VRS-HT3DA221J	AB		C	Resistor(2W 220Ω ± 5%)	[R18]
268	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R19]
269	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R27]
270	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R28]
271	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R100]
272	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R101]
273	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R104]
274	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R105]
275	VRS-CY1JB562J	AA		C	Resistor(1/16W 5.6KΩ ± 5%)	[R106]
276	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R109]
277	VRS-CY1JB105J	AA		C	Resistor(1/16W 1MΩ ± 5%)	[R110]
278	VRS-CY1JB151J	AA		C	Resistor(1/16W 150Ω ± 5%)	[R111]
279	VRS-CY1JB121J	AA		C	Resistor(1/16W 120Ω ± 5%)	[R112]
280	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ± 5%)	[R113]
281	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ± 5%)	[R114]
282	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ± 5%)	[R115]
283	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ± 5%)	[R116]
284	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ± 5%)	[R117]
285	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ± 5%)	[R118]
286	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R119]
287	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R120]
288	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R121]
289	VRS-CY1JB471J	AA		C	Resistor(1/16W 470Ω ± 5%)	[R122]
290	VRS-CY1JB471J	AA		C	Resistor(1/16W 470Ω ± 5%)	[R123]
291	VRS-CY1JB680J	AA		C	Resistor(1/16W 68Ω ± 5%)	[R124]
292	VRS-CY1JB471J	AA		C	Resistor(1/16W 470Ω ± 5%)	[R125]
293	VRS-CY1JB680J	AA		C	Resistor(1/16W 68Ω ± 5%)	[R126]
294	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R127]
295	VRS-CY1JB680J	AA		C	Resistor(1/16W 68Ω ± 5%)	[R128]
296	VRS-CY1JB106J	AA		C	Resistor(1/16W 10MΩ ± 5%)	[R130]
297	VRS-CY1JB224J	AA		C	Resistor(1/16W 220KΩ ± 5%)	[R131]
298	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ± 5%)	[R132]
299	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R133]
300	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R134]
301	VRS-CY1JB203J	AA		C	Resistor(1/16W 20KΩ ± 5%)	[R135]
302	VRS-CY1JB104J	AA		C	Resistor(1/16W 100KΩ ± 5%)	[R136]
303	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R137]
304	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ± 5%)	[R138]
305	VRS-CY1JB183J	AA		C	Resistor(1/16W 18KΩ ± 5%)	[R139]
306	VRS-CY1JB823J	AD		C	Resistor(1/16W 82KΩ ± 5%)	[R140]
307	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[R150]
308	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R152]
309	VRS-CY1JB391J	AA		C	Resistor(1/16W 390Ω ± 5%)	[R153]
310	VRS-CY1JB391J	AA		C	Resistor(1/16W 390Ω ± 5%)	[R154]
311	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ± 5%)	[R155]
312	VRS-CY1JB512J	AA		C	Resistor(1/16W 5.1KΩ ± 5%)	[R156]
313	VRS-CY1JB473J	AA		C	Resistor(1/16W 47KΩ ± 5%)	[R157]
314	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ± 5%)	[R158]
315	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ± 5%)	[R160]
316	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ± 5%)	[R161]
317	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ± 5%)	[R164]
318	VRS-CY1JB471J	AA		C	Resistor(1/16W 470Ω ± 5%)	[R165]
319	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R167]
320	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ± 5%)	[R168]
321	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ± 5%)	[R169]
322	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ± 5%)	[R170]
323	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ± 5%)	[R171]
324	VRS-CY1JB100J	AA		C	Resistor(1/16W 10Ω ± 5%)	[R172]
325	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R173]
326	VRS-CY1JB224J	AA		C	Resistor(1/16W 220KΩ ± 5%)	[R175]
327	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R176]
328	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R177]
329	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ± 5%)	[R178]
330	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ± 5%)	[R182]
331	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ± 5%)	[R186]
332	VRS-CY1JB222J	AA		C	Resistor(1/16W 2.2KΩ ± 5%)	[R187]
333	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R193]
334	VRS-CY1JB105J	AA		C	Resistor(1/16W 1MΩ ± 5%)	[R194]
335	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R195]
336	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R196]
337	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R197]
338	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R198]
339	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ± 5%)	[R199]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[4] Control PWB unit						
340	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R200]
341	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R201]
342	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R202]
343	VRS-CY1JB101J	AA		C	Resistor(1/16W 100Ω ± 5%)	[R203]
344	VRS-CY1JB101J	AA		C	Resistor(1/16W 100Ω ± 5%)	[R204]
345	VRS-CY1JB392J	AA		C	Resistor(1/16W 3.9KΩ ± 5%)	[R209]
346	VRS-CY1JB752J	AA		C	Resistor(1/16W 7.5KΩ ± 5%)	[R210]
347	VRSCY1JB1000F	AA		C	Resistor(1/16W 100Ω ± 1%)	[R211]
348	VRS-CY1JB202F	AC		C	Resistor(1/16W 2.0KΩ ± 1%)	[R212]
349	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R213]
350	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R214]
351	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R219]
352	VRS-CY1JB512J	AA		C	Resistor(1/16W 5.1KΩ ± 5%)	[R220]
353	VRS-CY1JB513J	AA		C	Resistor(1/16W 51KΩ ± 5%)	[R221]
354	VRS-CY1JB271J	AA		C	Resistor(1/16W 270Ω ± 5%)	[R222]
355	VRS-CY1JB114J	AA		C	Resistor(1/16W 110KΩ ± 5%)	[R224]
356	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ± 5%)	[R225]
357	VRS-CY1JB332J	AA		C	Resistor(1/16W 3.3KΩ ± 5%)	[R226]
358	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ± 5%)	[R227]
359	VRS-CY1JB224J	AA		C	Resistor(1/16W 220KΩ ± 5%)	[R228]
360	VRS-CY1JB114J	AA		C	Resistor(1/16W 110KΩ ± 5%)	[R229]
361	VRS-CY1JB133J	AA		C	Resistor(1/16W 13KΩ ± 5%)	[R230]
362	VRS-CY1JB332J	AA		C	Resistor(1/16W 3.3KΩ ± 5%)	[R231]
363	VRS-CY1JB393J	AA		C	Resistor(1/16W 39KΩ ± 5%)	[R232]
364	VRSCY1JB7871F	AA		C	Resistor(1/16W 7.87KΩ ± 1%)	[R234]
365	VRS-CY1JB473J	AA		C	Resistor(1/16W 47KΩ ± 5%)	[R235]
366	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R236]
367	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ± 5%)	[R241]
368	VRS-CY1JB100J	AA		C	Resistor(1/16W 10Ω ± 5%)	[R243]
369	VRS-CY1JB100J	AA		C	Resistor(1/16W 10Ω ± 5%)	[R244]
370	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R245]
371	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R246]
372	VRS-CY1JB330J	AA		C	Resistor(1/16W 33Ω ± 5%)	[R247]
373	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R248]
374	RR-TZ3018SCZZ	AC		C	Block resistor(470Ω x4)	[RA1]
375	RR-TZ3018SCZZ	AC		C	Block resistor(470Ω x4)	[RA2]
376	RR-TZ3023SCZZ	AC		B	Resistor array(100Ω x4)	[RA3]
377	RR-TZ3023SCZZ	AC		B	Resistor array(100Ω x4)	[RA4]
378	RR-TZ3023SCZZ	AC		B	Resistor array(100Ω x4)	[RA5]
379	RR-TZ3023SCZZ	AC		B	Resistor array(100Ω x4)	[RA6]
380	RR-TZ3023SCZZ	AC		B	Resistor array(100Ω x4)	[RA7]
381	RR-TZ3023SCZZ	AC		B	Resistor array(100Ω x4)	[RA8]
382	RR-TZ3016SCZZ	AA		C	Block resistor(33Ω x4)	[RA9]
383	RR-TZ3016SCZZ	AA		C	Block resistor(33Ω x4)	[RA10]
384	RR-TZ3023SCZZ	AC		B	Resistor array(100Ω x4)	[RA11]
385	RR-TZ3023SCZZ	AC		B	Resistor array(100Ω x4)	[RA12]
386	RR-TZ3016SCZZ	AA		C	Block resistor(33Ω x4)	[RA13]
387	RR-TZ3016SCZZ	AA		C	Block resistor(33Ω x4)	[RA14]
388	RR-TZ3016SCZZ	AA		C	Block resistor(33Ω x4)	[RA15]
389	RR-TZ3016SCZZ	AA		C	Block resistor(33Ω x4)	[RA16]
390	RR-TZ3016SCZZ	AA		C	Block resistor(33Ω x4)	[RA17]
391	RR-TZ3016SCZZ	AA		C	Block resistor(33Ω x4)	[RA18]
392	RR-TZ3016SCZZ	AA		C	Block resistor(33Ω x4)	[RA19]
393	VHiBA178M24-1	AL	N	B	IC(BA178M24FP-E2)	[REG1]
394	RH-iX2360XHZZ	AL		B	IC(S-815A33AMC-I2S-TF)	[REG2]
395	RH-iX2360XHZZ	AL		B	IC(S-815A33AMC-I2S-TF)	[REG3]
396	RCRSB2185XHZZ	AD		B	Crystal(32.768kHz)	[X1]
397	RCRSP2176SCZZ	AG		B	Crystal(32.256MHz)	[X2]
	(Unit)					
901	DCEKC284TXHZZ	BY	N	E	Control PWB unit(Within ROM)	[20U]
901	DCEKC386TXHZZ	BW	N	E	Control PWB unit(Within ROM)	[20C/25C]
[5] LIU PWB unit						
1	VHVRA391PV6-1	AE		B	Varistor(RA-391P-V6-2)	[AR1]
2	VHVRA501PC6-1	AG		B	Varistor(RA-501P-C6)	[AR3]
3	QCNWN205CXHZZ	AF	N	C	ARG earth cable	[ARG]
4	VCEAGA1HW226M	AB		C	Capacitor(50WV 22μ F)	[C3]
5	RC-FZ3024SCZZ	AG		C	Capacitor(250WV 0.82μ F)	[C5]
6	VCKYPA1HB103K	AA		C	Capacitor(50WV 0.01μ F)	[C6]
7	VCEAGA1HW226M	AB		C	Capacitor(50WV 22μ F)	[C7]
8	VCEAGA1EW107M	AB		C	Capacitor(25WV 100μ F)	[C8]
9	VCEAGA1CW476M	AB		C	Capacitor(16WV 47μ F)	[C9]
10	VCEAGA1HW107M	AA		C	Capacitor(50WV 100μ F)	[C15]
11	VCEAEA1CW226M	AA		C	Capacitor(16WV 22μ F)	[C16]
12	VCEAEA1EW475M	AA		C	Capacitor(25WV 4.7μ F)	[C17]
13	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C101]
14	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C103]
15	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[C105]
16	VCKYCY1CB104K	AB		C	Capacitor(16WV 0.1μ F)	[C106]
17	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[C107]
18	VCKYCY1HB821K	AA		C	Capacitor(50WV 820PF)	[C109]
19	VCCCCY1HH330J	AA		C	Capacitor(50WV 33PF)	[C110]
20	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μ F)	[C111]
21	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C113]
22	VCCCCY1HH221J	AA		C	Capacitor(50WV 220PF)	[C114]

	NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
	[5] LIU PWB unit						
	23	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C115]
	24	VCKYCY1AF105Z	AC		C	Capacitor(10WV 1μ F)	[C116]
	25	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[C122]
	26	VCCCCY1HH330J	AA		C	Capacitor(50WV 33PF)	[C123]
	27	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF)	[C124]
	28	VCCCCY1HH221J	AA		C	Capacitor(50WV 220PF)	[C125]
	29	VCKYCY1CB104K	AB		C	Capacitor(16WV 0.1μ F)	[C126]
	30	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C127]
	31	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C135]
	32	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C136]
	33	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200PF)	[C141]
	34	VCKYCY1CB104K	AB		C	Capacitor(16WV 0.1μ F)	[C143]
	35	RRLYD3439XHZZ	AM		B	Relay(A5X-G-24E-908)	[CML1]
	36	QJAKZ2079XH0D	AD		C	Jack	[CNHJ]
	37	QCNCM2666XH1B	AE	N	C	Connector(12pin)	[CNLIU]
	38	QJAKZ2060SC0B	AD		C	Jack	[CNLNJ]
	39	VHD1N4148//-1	AA		B	Diode(1N4148)	[D1]
	40	VHD1N4148//-1	AA		B	Diode(1N4148)	[D2]
	41	VHD1N4148//-1	AA		B	Diode(1N4148)	[D3]
	42	QCNWN205CXHZZ	AF	N	C	FG earth cable	[FG]
	43	RH-iX2383XHZZ	AG		B	IC(LM2902NS)	[IC101]
	44	VHPPS2501AL-1	AF		B	Photo coupler(PS2501A)	[PC3]
⚠	45	VHPSG206S//-1	AG		B	Photo transistor(SG206S)	[PH1]
	46	VSKTC3198GR-1	AD		B	Transistor(KTC3198GR)	[Q2]
	47	VSRT1N436C/-1	AD		B	Transistor(RT1N436C)	[Q102]
	48	VSRT1P141C+-1	AB		B	Transistor(RT1P141C)	[Q103]
	49	VSRT1N436C/-1	AD		B	Transistor(RT1N436C)	[Q104]
	50	VSRT1N436C/-1	AD		B	Transistor(RT1N436C)	[Q105]
	51	VRD-HT2EY221J	AA		C	Resistor(1/4W 220Ω ± 5%)	[R4]
	52	VRD-HT2EY223J	AA		C	Resistor(1/4W 22KΩ ± 5%)	[R6]
	53	VRS-HT3AA510J	AA		C	Resistor(1W 51Ω ± 5%)	[R8]
	54	VRD-HT2EY102J	AA		C	Resistor(1/4W 1KΩ ± 5%)	[R10]
	55	VRD-HT2EY101J	AA		C	Resistor(1/4W 100Ω ± 5%)	[R11]
	56	VRD-HT2EY151J	AA		C	Resistor(1/4W 150Ω ± 5%)	[R12]
	57	VRD-HT2HY223J	AA		C	Resistor(1/2W 22KΩ ± 5%)	[R14]
	58	VRS-RE2HA101J	AB		C	Resistor(1/2W 100Ω ± 5%)	[R16]
	59	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ± 5%)	[R108]
	60	VRS-CY1JB621J	AA		C	Resistor(1/16W 620Ω ± 5%)	[R108]
	61	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R109]
	62	VRS-CY1JB393J	AA		C	Resistor(1/16W 39KΩ ± 5%)	[R110]
	63	VRS-CY1JB243J	AA		C	Resistor(1/16W 24KΩ ± 5%)	[R111]
	64	VRS-CY1JB223J	AA		C	Resistor(1/16W 22KΩ ± 5%)	[R112]
	65	VRS-CY1JB153J	AA		C	Resistor(1/16W 15KΩ ± 5%)	[R113]
	66	VRS-CY1JB332J	AA		C	Resistor(1/16W 3.3KΩ ± 5%)	[R114]
	67	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R115]
	68	VRS-CY1JB332J	AA		C	Resistor(1/16W 3.3KΩ ± 5%)	[R116]
	69	VRS-CY1JB163J	AA		C	Resistor(1/16W 16KΩ ± 5%)	[R117]
	70	VRS-CY1JB822J	AA		C	Resistor(1/16W 8.2KΩ ± 5%)	[R119]
	71	VRS-CY1JB101J	AA		C	Resistor(1/16W 100Ω ± 5%)	[R120]
	72	VRS-CY1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R121]
	73	VRS-CY1JB823J	AD		C	Resistor(1/16W 82KΩ ± 5%)	[R122]
	74	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ± 5%)	[R123]
	75	VRS-CY1JB823J	AD		C	Resistor(1/16W 82KΩ ± 5%)	[R125]
	76	VRS-CY1JB332J	AA		C	Resistor(1/16W 3.3KΩ ± 5%)	[R126]
	77	VRS-CY1JB113J	AA		C	Resistor(1/16W 11KΩ ± 5%)	[R127]
	78	VRS-CY1JB103J	AA		C	Resistor(1/16W 10KΩ ± 5%)	[R128]
	79	VRS-CY1JB133J	AA		C	Resistor(1/16W 13KΩ ± 5%)	[R129]
	80	VRS-CY1JB332J	AA		C	Resistor(1/16W 3.3KΩ ± 5%)	[R130]
	81	VRS-CY1JB133J	AA		C	Resistor(1/16W 13KΩ ± 5%)	[R131]
	82	VRS-CY1JB621J	AA		C	Resistor(1/16W 620Ω ± 5%)	[R133]
	83	VRS-CY1JB102J	AA		C	Resistor(1/16W 1KΩ ± 5%)	[R134]
⚠	84	RTRNi2164XHZZ	AG		B	Transformer(I2164)	[T1]
	85	VHEHZ2C1///-1	AA		B	Zener diode(HZ2C1)	[ZD2]
	86	VHEHZ2C1///-1	AA		B	Zener diode(HZ2C1)	[ZD3]
	87	VHEHZ9C3///-1	AE		B	Zener diode(HZ9C3)	[ZD4]
	88	VHEHZ27-1//-1	AB		B	Zener diode(HZ27-1)	[ZD7]
		(Unit)					
	901	DCEKL253DXH01	BC	N	E	LIU PWB unit	
	[6] Power supply PWB unit						
	1	0KYL5051AQ001	AE		C	Ferrite beads(BL02RN1)	[BEA1]
	2	0KYL5051AQ001	AE		C	Ferrite beads(BL02RN1)	[BEA101]
	3	0KYC2131QS104	AG	N	C	Capacitor(250WV 0.1μ F)	[C1]
	4	0KYC3126KS121	AS		C	Capacitor(200WV 120μ F)	[C5]
	5	0KYC1384QL472	AH		C	Capacitor(4700PF)	[C6]
	6	0KYC1384QL472	AH		C	Capacitor(4700PF)	[C7]
	7	0KYC10A9RQ221	AG		C	Capacitor(1KWV 220PF)	[C8]
	8	0KYC1102EC472	AC		C	Capacitor(50WV 4700PF)	[C9]
	9	0KYC1102CC333	AC		C	Capacitor(25WV 0.033μ F)	[C10]
	10	0KYC10Q1EQ101	AC		C	Capacitor(50WV 100PF)	[C11]
	11	0KYC30A0EQ101	AH	N	C	Capacitor(50WV 100μ F)	[C101]
	12	0KYC30A0BQ471	AL		C	Capacitor(16WV 470μ F)	[C102]
	13	0KYC30A0BQ121	AG		C	Capacitor(16WV 120μ F)	[C104]
	14	0KYC10Q2BQ104	AC	N	C	Capacitor(16WV 0.1μ F)	[C110]
	15	0KYK2051AQ002	AG		C	Connector(2pin)	[CNAC]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[6] Power supply PWB unit						
16	0KYK2148LS002	AG	N	C	Connector(8pin)	[CNPW]
17	0KYD2051AQ002	AD		B	Diode(1SS133)	[D3]
18	0KYD2051AQ002	AD		B	Diode(1SS133)	[D4]
19	0KYD4066AQ060	AF		B	Zener diode(HZS9)	[D5]
20	0KYD2051AQ002	AD		B	Diode(1SS133)	[D6]
21	0KYD4066AQ105	AF		B	Zener diode(HZS30)	[D8]
22	0KYD1057AQ006	AF		B	Diode(ERA15-06)	[D10]
23	0KYD1057AQ006	AF		B	Diode(ERA15-06)	[D11]
24	0KYD1057AQ006	AF		B	Diode(ERA15-06)	[D12]
25	0KYD1057AQ006	AF		B	Diode(ERA15-06)	[D13]
26	0KYD2049BQ202	AQ		B	Diode(ERC91-02)	[D101]
27	0KYD20Q0AQ003	AL		B	Diode(EC31QS03L)	[D102]
28	0KYD4061AQ380	AK	N	B	Zener diode(HZ-36P)	[D104]
29	0KYK7124AS2R5	AL		B	Fuse(AC250V 2.5A)	[F1]
30	0KYH1053AQ003	AP		B	IC(TA76431AS)	[IC101]
31	0KYW0000AQ015	AC		C	Jumper wire	[J1]
32	0KYL1173JL353	AS	N	C	Inductor(SS11VL-04350)	[L1]
33	0KYW0000AQ005	AC		C	Jumper wire	[NTC1]
34	0KYW0000AQ012	AC		C	Jumper wire	[P101]
35	0KYH7148AS003	AM	N	B	Optical isolater(PC123)	[PC1]
36	0KYT3563KL001	AT	N	B	FET(2SK3563)	[Q1]
37	0KYT4097CC002	AG		B	Transistor(2SC4097)	[Q2]
38	0KYR3133AC225	AC		C	Resistor(1/4W 2.2MΩ)	[R1]
39	0KYR3126TC184	AB		C	Resistor(1/8W 180KΩ)	[R2]
40	0KYR3126TC184	AB		C	Resistor(1/8W 180KΩ)	[R3]
41	0KYR3121TC000	AB		C	Resistor(1/8W 0Ω)	[R4]
42	0KYR3114VC153	AC	N	C	Resistor(1/10W 15KΩ)	[R5]
43	0KYR3121TC821	AC		C	Resistor(1/8W 820Ω)	[R6]
44	0KYR3111VC333	AB		C	Resistor(1/10W 33KΩ)	[R8]
45	0KYR3121TC101	AB		C	Resistor(1/8W 100Ω)	[R9]
46	0KYR3111VC682	AB		C	Resistor(1/10W 6.8KΩ)	[R10]
47	0KYR3114VC103	AC		C	Resistor(1/10W 10KΩ)	[R11]
48	0KYR3111VC223	AB		C	Resistor(1/10W 22KΩ)	[R12]
49	0KYR3111VC821	AB		C	Resistor(1/10W 820Ω)	[R13]
50	0KYR3121TC681	AB		C	Resistor(1/8W 680Ω)	[R17]
51	0KYR1053UQ100	AC		C	Resistor(1/4W 10Ω)	[R19]
52	0KYR3133AC225	AC		C	Resistor(1/4W 2.2MΩ)	[R41]
53	0KYR3131AC752	AC	N	C	Resistor(1/4W 7.5KΩ)	[R101]
54	0KYR3131AC752	AC	N	C	Resistor(1/4W 7.5KΩ)	[R102]
55	0KYR1053UQ562	AC	N	C	Resistor(1/4W 5.6KΩ)	[R103]
56	0KYR1053UQ562	AC	N	C	Resistor(1/4W 5.6KΩ)	[R104]
57	0KYR3131AC752	AC	N	C	Resistor(1/4W 7.5KΩ)	[R105]
58	0KYR3131AC752	AC	N	C	Resistor(1/4W 7.5KΩ)	[R106]
59	0KYR1053UQ562	AC	N	C	Resistor(1/4W 5.6KΩ)	[R107]
60	0KYR3131AC752	AC	N	C	Resistor(1/4W 7.5KΩ)	[R108]
61	0KYR3131AC752	AC	N	C	Resistor(1/4W 7.5KΩ)	[R109]
62	0KYR3121TC101	AB		C	Resistor(1/8W 100Ω)	[R110]
63	0KYR3111VC272	AC	N	C	Resistor(1/10W 2.7KΩ)	[R111]
64	0KYR3111VC821	AB		C	Resistor(1/10W 820Ω)	[R112]
65	0KYR3114VC622	AC	N	C	Resistor(1/10W 6.2KΩ)	[R113]
66	0KYR3114VC562	AC		C	Resistor(1/10W 5.6KΩ)	[R115]
67	0KYL2100DS007	AY		B	Transformer(07D1)	[T1]
68	0KYR8054EQ102	AG	N	C	Variable resistor(1/10W 1KΩ)	[VR101]
69	0KYD7062AQ241	AH		B	Transient voltage surge suppressor(ENC241)	[Z1]
	(Unit)					
⚠ 901	RDENT2208XHZZ	BG	N	E	Power supply PWB unit	
[7] Operation panel PWB unit						
1	QSW-K0005AWZZ	AC		C	Tact switch	[SW]
2	QSW-M2246AXZZ	AH		C	FRSNS sensor	[SW1]
3	QSW-M2294XHZZ	AE		C	ORGSNS sensor	[SW2]
	(Unit)					
901	DCEKP255DXH01	BF	N	E	Operation panel PWB unit	
[8] Ink PWB unit						
1	RC-EZ3074XHZZ	AG		C	Capacitor(25WV 1000μF)	[C1]
2	VCCCCZ1EH181J	AA		C	(25WV 180PF)	[C100]
3	VCCCCZ1EH181J	AA		C	(25WV 180PF)	[C101]
4	VCKYCY1HF473Z	AA		C	Capacitor(50WV 0.047μF)	[C102]
5	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C104]
6	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C106]
7	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C107]
8	VCKYCY1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C111]
9	QCNWN203CXHZZ	AP	N	C	FFC,Ink cable 1	[CNHEAD1]
10	QCNWN203CXHZZ	AP	N	C	FFC,Ink cable 2	[CNHEAD2]
11	RH-iX2248XHZZ	BF		B	IC(IX2248)	[IC100]
12	VHPGP1S094HCZ	AG		B	Photo transistor(GP1S094HCZ)	[PI1]
13	VRS-CZ1JB390J	AA		C	Resistor(1/16W 39Ω ± 5%)	[R100]
14	VRS-CZ1JB390J	AA		C	Resistor(1/16W 39Ω ± 5%)	[R101]
15	VRS-CZ1JB392J	AD		C	Resistor(1/16W 3.9KΩ ± 5%)	[R102]
16	VRS-CZ1JB000J	AA		C	Resistor(1/16W 0Ω ± 5%)	[R103]
17	VRS-CZ1JB392J	AD		C	Resistor(1/16W 3.9KΩ ± 5%)	[R104]
18	VRS-CZ1JB392J	AD		C	Resistor(1/16W 3.9KΩ ± 5%)	[R105]
19	VRS-CZ1JB121J	AA		C	Resistor(1/16W 120Ω ± 5%)	[R106]
20	VRS-CZ1JB512J	AD		C	Resistor(1/16W 5.1KΩ ± 5%)	[R107]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[8] Ink PWB unit					
21	VRS-CZ1JB512J	AD		C	Resistor(1/16W 5.1KΩ ± 5%) [R108]
22	VRS-CZ1JB121J	AA		C	Resistor(1/16W 120Ω ± 5%) [R109]
23	PSHEP3680XHZZ	AD		C	C1 sheet [SHEET1]
24	PTPEH2098XHZZ	AD		C	FPC tape [TAPE1]
25	PTPEH2086XHZZ	AC		C	FFC tape 1 [TAPE2]
26	PTPEH2086XHZZ	AC		C	FFC tape 1 [TAPE3]
27	PTPEH2096XHZZ	AD		C	FPC tape 2 [TAPE4]
	(Unit)				
901	DCEKi256DXH01	BG	N	E	Ink PWB unit with FPC

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PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
【 C 】				
CCNWN202CXH01	1-14	AN	N	C
CMOTZ2192XH01	1-80	AX	N	B
CPAKC202GXH01	3-1	BA	N	D
CPAKC448FXH01	3-1	AZ	N	D
CPLTP3222XHR3	3-3	BA	N	D
CROLP2499XH01	1-32	AM		C
CROLP2517XH01	1-88	AX	N	C
CROLR2516XH01	1-89	AX	N	C
CROLR2518XH01	1-31	AX	N	C
【 D 】				
DCEKC284TXHZZ	1-3	BY	N	E
〃	4-901	BY	N	E
DCEKC386TXHZZ	1-3	BW	N	E
〃	4-901	BW	N	E
DCEKi256DXH01	1-2	BG	N	E
〃	8-901	BG	N	E
DCEKL253DXH01	1-1	BC	N	E
〃	5-901	BC	N	E
DCEKP254DXH01	2-901	BL	N	E
DCEKP255DXH01	2-9	BF	N	E
〃	7-901	BF	N	E
DUNTK245DXHGY	3-5	BA	N	E
【 G 】				
GCABA2440XHSA	1-4	AY	N	D
GCABB2441XHSA	1-15	AY	N	D
GCASP2187XHSA	2-1	AW	N	D
GCOVA2465XHZA	1-54	AL		C
GCOVA2466XHZZ	1-55	AG		C
GCOVA2501XHSA	1-23	AS	N	C
GCOVA2501XHSB	1-23	AS	N	C
GCOVA2502XHSA	1-5	AF	N	C
GLEGG2088XHZZ	1-16	AE	N	C
【 H 】				
HPNLH2444XHSA	2-26	AL	N	D
HPNLH2444XHSF	2-26	AL	N	D
【 J 】				
JBTN-2463XHSA	2-2	AL	N	C
JBTN-2464XHSA	2-3	AG	N	C
JBTN-2465XHSA	2-4	AF	N	C
JBTN-2466XHSA	2-5	AF	N	C
JBTN-2467XHSA	2-6	AF	N	C
JBTN-2468XHSA	2-7	AL	N	C
JBTN-2469XHSA	2-8	AP	N	C
【 L 】				
LBNDJ2006XHZZ	1-17	AA		C
LBSHP2157XHZZ	1-90	AE	N	C
LCHSM2078XHZZ	1-91	AP	N	C
LFRM-2257XHZZ	1-92	AY	N	C
LFRM-2258XHZZ	1-75	AL	N	C
LHLDW2290XHZZ	1-53	AE	N	C
LHLDZ2215XHZZ	1-70	AE		C
LHLDZ2221XHZZ	1-57	AD		C
LHLDZ2222XHZZ	1-58	AD		C
LHLDZ2245XHZA	1-59	AM		C
LHLDZ2246XHZZ	1-60	AE		C
LHLDZ2247XHZZ	1-61	AG		C
LHLDZ2275XHZZ	1-94	AF	N	C
LHLDZ2276XHZZ	1-43	AF	N	C
LHLDZ2277XHZZ	1-44	AF	N	C
LHLDZ2278XHZZ	1-71	AG	N	C
LHLDZ2288XHZZ	1-95	AF	N	C
LHLDZ2291XHZZ	1-93	AE	N	C
LPLTG3311XHZZ	2-16	AF	N	C
LPLTM3316XHZZ	1-96	AF	N	C
LPLTM3317XHZZ	1-18	AL	N	C
LPLTM3328XHZZ	1-81	AX	N	C
LPLTM3329XHZZ	1-97	AX	N	C
LPLTP3312XHZZ	2-17	AE	N	C
LPLTP3313XHZZ	2-18	AE	N	C
LPLTP3314XHZZ	2-19	AE	N	C
LPLTP3318XHZZ	3-2	AP	N	D
LPLTP3321XHZZ	1-24	AE	N	C
LPLTP3334XHZZ	1-49	AL	N	C
LX-BZ2205XHZZ	1-B7	AC		C
LX-BZ2282XHZZ	1-B2	AB		C
LX-BZ2308XHZZ	1-B1	AE	N	C
LX-WZ2273XHZZ	1-W2	AE	N	C
LX-WZ2309XHZZ	1-W3	AE	N	C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
【 M 】				
MARMP2036XHZZ	1-98	AF	N	C
MARMP2037XHZZ	1-99	AE	N	C
MLEVP2377XHZZ	1-62	AE		C
MLEVP2395XHSA	1-6	AF	N	C
MLEVP2396XHZZ	1-100	AF	N	C
MLEVP2397XHZZ	1-101	AF	N	C
MSPRC3360XHZZ	1-102	AE		C
MSPRC3362XHZZ	1-72	AD		C
MSPRC3387XHZZ	1-103	AD		C
MSPRC3455XHZZ	2-20	AE	N	C
MSPRC3456XHZZ	2-21	AE	N	C
MSPRC3457XHZZ	1-115	AE	N	C
MSPRC3458XHZZ	1-104	AE	N	C
MSPRC3459XHZZ	1-105	AE	N	C
MSPRC3460XHZZ	1-106	AE	N	C
MSPRC3461XHZZ	1-107	AE	N	C
MSPRC3462XHZZ	1-108	AE	N	C
MSPRC3463XHZZ	1-109	AE	N	C
MSPRC3464XHZZ	1-110	AE	N	C
MSPRC3465XHZZ	1-82	AE	N	C
MSPRC3469XHZZ	1-7	AE	N	C
MSPRC3470XHZZ	1-19	AF	N	C
MSPRC3488XHZZ	1-33	AE	N	C
MSPRC3489XHZZ	1-34	AE	N	C
MSPRC3490XHZZ	1-111	AE	N	C
MSPRD3382XHZZ	1-63	AE		C
MSPRD3383XHZZ	1-64	AE		C
MSPRD3413XHZZ	1-65	AE		C
MSPRD3495XHZZ	2-22	AE	N	C
MSPRK3502XHZZ	1-113	AF	N	C
MSPRK3503XHZZ	1-112	AF	N	C
MSPRP3279XHZZ	1-66	AE		C
MSPRP3384XHZZ	1-67	AG		C
MSPRP3388XHZZ	1-68	AE		C
【 N 】				
NBLTT2065XHZZ	1-114	AR	N	C
NGERH2392XHZZ	1-83	AC		C
NGERH2563XHZZ	1-84	AE		C
NGERH2564XHZZ	1-76	AE		C
NGERH2565XHZZ	1-77	AE		C
NGERH2611XHZZ	1-85	AE		C
NGERH2633XHZZ	1-86	AF	N	C
NGERH2634XHZZ	1-116	AF	N	C
NGERH2636XHZZ	1-36	AF	N	C
NGERH2637XHZZ	1-37	AF	N	C
NGERH2638XHZZ	1-117	AF	N	C
NGERH2639XHZZ	1-39	AF	N	C
NGERH2643XHZZ	1-118	AF	N	C
NGERP2318XHZZ	1-10	AD		C
NPLYD2095XHZZ	1-119	AE		C
NROLM2480XHZZ	1-120	AE		C
NROLP2332XHZZ	2-23	AD		C
NROLP2477XHZZ	1-121	AE		C
NROLP2478XHZZ	1-78	AE		C
NROLP2492XHZZ	1-25	AT		C
NROLR2483XHZZ	1-40	AL		C
NSFTM2384XHZZ	1-122	AR	N	C
NSFTP2385XHZZ	1-41	AF	N	C
【 P 】				
PBRS-2066XHZZ	2-24	AV	N	C
PCAPH2090XHZZ	1-73	AE		C
PFLT-2030XHZZ	1-123	AE	N	C
PGiDM2669XHZZ	2-25	AS	N	C
PGiDM2670XHSA	1-11	AF	N	C
PGiDM2671XHSA	1-12	AG	N	C
PGiDM2672XHSA	1-13	AQ	N	C
PGUMM2189XHZZ	1-74	AE		C
PGUMR2186XHZA	1-79	AG	N	C
PGUMS2188XHZZ	1-69	AC		C
PGUMS2196XHZZ	1-26	AG		C
PSHEP3680XHZZ	8-23	AD		C
PSHEZ3817XHZZ	1-27	AF	N	C
PSHEZ3828XHZZ	1-28	AF	N	C
PSHEZ3829XHZZ	1-87	AF	N	C
PSHEZ3830XHZZ	2-14	AE	N	C
PSHEZ3831XHZZ	1-8	AG	N	C
PSHEZ3840XHZZ	1-51	AF	N	C
PSHEZ3841XHZZ	1-126	AF	N	C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
PSHEZ3842XHZZ	1-30	AF	N	C
PSPŌ-2022XHZZ	1-48	AG	N	C
PSPŌ-2023XHZZ	1-9	AE	N	C
PTPEH2086XHZZ	8-25	AC		C
〃	8-26	AC		C
PTPEH2096XHZZ	8-27	AD		C
PTPEH2098XHZZ	8-24	AD		C
PTPEH2114XHZZ	1-50	AC	N	C
【 Q 】				
QACCD2090XHZZ	1-20	AS	N	B
QCNCM2666XH0B	4-216	AD		C
QCNCM2666XH0D	4-209	AD	N	C
QCNCM2666XH0G	4-207	AE		C
QCNCM2666XH0H	4-215	AE	N	C
QCNCM2666XH1B	4-212	AE	N	C
〃	5-37	AE	N	C
QCNCM2666XH1F	4-213	AF		C
QCNCM2667XH0C	4-214	AD	N	C
QCNCM2681XH0D	4-208	AD	N	C
QCNCW2556SC1B	4-210	AG		C
〃	4-211	AG		C
QCNWG209BXHGR	3-4	AN		C
QCNWG370BXHZZ	3-6	AL		C
QCNWN200CXHZZ	1-46	AL	N	C
QCNWN201CXHZZ	1-47	AP	N	C
QCNWN203CXHZZ	8-9	AP	N	C
〃	8-10	AP	N	C
QCNWN205CXHZZ	5-3	AF	N	C
〃	5-42	AF	N	C
QCNWN498BXHZZ	1-29	AR	N	C
〃	2-15	AR	N	C
QCNWN499BXHZZ	1-45	AP	N	C
QFS-L1027YCZZ	4-233	AE		A
QFS-L2016XHZZ	4-232	AD		A
QJAKZ2060SC0B	5-38	AD		C
QJAKZ2079XH0D	5-36	AD		C
QSW-K0005AWZZ	2-10	AC		C
〃	7-1	AC		C
QSW-M2246AXZZ	2-11	AH		C
〃	7-2	AH		C
QSW-M2294XHZZ	2-12	AE		C
〃	7-3	AE		C
【 R 】				
RC-EZ3074XHZZ	8-1	AG		C
RC-FZ3024SCZZ	5-5	AG		C
RCiLF2175XHZZ	4-242	AL		C
RCŌRF0049CFZZ	1-125	AR		B
RCŌRF2147XHZZ	1-21	AG	N	B
RCRSB2185XHZZ	4-396	AD		B
RCRSP2176SCZZ	4-397	AG		B
RDENT2208XHZZ	1-22	BG	N	E
〃	6-901	BG	N	E
RH-iX2168SCZZ	4-234	BB		B
RH-iX2248XHZZ	8-11	BF		B
RH-iX2360XHZZ	4-394	AL		B
〃	4-395	AL		B
RH-iX2383XHZZ	4-241	AG	N	B
〃	5-43	AG		B
RH-iX2405XHZZ	4-236	BD	N	B
RH-iX2418XHZZ	4-235	BA	N	B
RMŌTS2193XHZZ	1-124	AX	N	B
RRLYD3439XHZZ	5-35	AM		B
RR-TZ3016SCZZ	4-382	AA		C
〃	4-383	AA		C
〃	4-386	AA		C
〃	4-387	AA		C
〃	4-388	AA		C
〃	4-389	AA		C
〃	4-390	AA		C
〃	4-391	AA		C
〃	4-392	AA		C
RR-TZ3018SCZZ	4-374	AC		C
〃	4-375	AC		C
RR-TZ3023SCZZ	4-376	AC		B
〃	4-377	AC		B
〃	4-378	AC		B
〃	4-379	AC		B
〃	4-380	AC		B
〃	4-381	AC		B
〃	4-384	AC		B
〃	4-385	AC		B
RTRNi2164XHZZ	5-84	AG		B

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
RUNTZ2080XH02	2-13	BA		B
RUNTZ2145XHZZ	1-42	BN		B
【 S 】				
SPAKA446FXHZZ	3-7	AH	N	D
SPAKA447FXHZZ	3-8	AH	N	D
SPAKA450FXHZZ	3-9	AK	N	D
SPAKA451FXHZZ	3-10	AE	N	D
SPAKC482FXHTZ	3-1	AS	N	D
SPAKP449FXHZZ	3-11	AG	N	D
【 T 】				
TCADH3685XHZZ	3-12	AE	N	D
TCADZ2891XHZZ	3-13	AF		D
TCADZ3683XHZZ	3-14	AG	N	D
TCADZ3700XHZZ	3-14	AG	N	D
TCADZ3701XHZZ	3-17	AG	N	D
TiNSE4427XHTZ	3-15	AQ	N	D
TiNSK4436XHTZ	3-15	AZ	N	D
TLABH441HXHZZ	1-52	AE	N	D
【 U 】				
UBATL2049SCZZ	4-1	AF		B
UiNK-2034XHZZ	3-16	AE		S
【 V 】				
VCCCCY1HH100D	4-53	AA		C
VCCCCY1HH101J	4-35	AA		C
〃	4-48	AA		C
〃	4-82	AA		C
〃	4-119	AA		C
〃	4-120	AA		C
〃	4-164	AA		C
〃	4-165	AA		C
〃	4-171	AA		C
〃	4-190	AA		C
〃	4-191	AA		C
〃	4-192	AA		C
〃	4-193	AA		C
〃	4-194	AA		C
〃	4-195	AA		C
〃	4-196	AA		C
〃	4-197	AA		C
VCCCCY1HH180J	4-58	AA		C
VCCCCY1HH220J	4-56	AA		C
〃	4-81	AA		C
VCCCCY1HH221J	4-26	AA		C
〃	4-85	AA		C
〃	4-170	AA		C
〃	4-175	AA		C
〃	5-22	AA		C
〃	5-28	AA		C
VCCCCY1HH330J	5-19	AA		C
〃	5-26	AA		C
VCCCCZ1EH181J	8-2	AA		C
〃	8-3	AA		C
VCEAEA1CW226M	5-11	AA		C
VCEAEA1EW475M	5-12	AA		C
VCEAGA1CW476M	5-9	AB		C
VCEAGA1EW107M	5-8	AB		C
VCEAGA1EW227M	4-28	AB		C
VCEAGA1EW476M	4-8	AA		C
〃	4-19	AA		C
〃	4-20	AA		C
〃	4-21	AA		C
〃	4-24	AA		C
〃	4-25	AA		C
VCEAGA1HW107M	4-15	AA		C
〃	4-29	AA		C
〃	5-10	AA		C
VCEAGA1HW226M	4-2	AB		C
〃	4-11	AB		C
〃	4-30	AB		C
〃	5-4	AB		C
〃	5-7	AB		C
VCEAGA1HW476M	4-16	AB		C
〃	4-17	AB		C
VCKYCY1AF105Z	4-4	AC		C
〃	4-5	AC		C
〃	4-6	AC		C
〃	4-9	AC		C
〃	4-10	AC		C
〃	4-22	AC		C
〃	4-32	AC		C
〃	4-33	AC		C
〃	4-55	AC		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
〃	4-57	AC		C
〃	4-59	AC		C
〃	4-60	AC		C
〃	4-61	AC		C
〃	4-62	AC		C
〃	4-63	AC		C
〃	4-65	AC		C
〃	4-92	AC		C
〃	4-109	AC		C
〃	4-110	AC		C
〃	4-112	AC		C
〃	4-124	AC		C
〃	4-125	AC		C
〃	4-148	AC		C
〃	4-162	AC		C
〃	4-173	AC		C
〃	5-24	AC		C
VCKYCY1CB104K	4-27	AB		C
〃	4-67	AB		C
〃	4-114	AB		C
〃	4-147	AB		C
〃	4-149	AB		C
〃	4-204	AB		C
〃	4-205	AB		C
〃	5-16	AB		C
〃	5-29	AB		C
〃	5-34	AB		C
VCKYCY1HB102K	4-12	AA		C
〃	4-13	AA		C
〃	4-50	AA		C
〃	4-73	AA		C
〃	4-88	AA		C
〃	4-111	AA		C
〃	4-113	AA		C
〃	4-115	AA		C
〃	4-127	AA		C
〃	4-143	AA		C
〃	4-161	AA		C
〃	4-188	AA		C
〃	4-189	AA		C
〃	4-202	AA		C
〃	4-307	AA		C
〃	5-13	AA		C
〃	5-14	AA		C
〃	5-23	AA		C
〃	5-27	AA		C
VCKYCY1HB103K	4-18	AA		C
〃	4-68	AA		C
VCKYCY1HB222K	4-156	AA		C
〃	4-157	AA		C
〃	4-158	AA		C
〃	4-159	AA		C
〃	4-160	AA		C
〃	4-184	AA		C
〃	4-185	AA		C
〃	4-186	AA		C
〃	4-200	AA		C
〃	4-201	AA		C
〃	5-21	AA		C
〃	5-30	AA		C
〃	5-31	AA		C
〃	5-32	AA		C
〃	5-33	AA		C
VCKYCY1HB272K	4-179	AB		C
VCKYCY1HB471K	4-102	AB		C
〃	4-103	AB		C
〃	4-104	AB		C
〃	4-128	AB		C
〃	4-129	AB		C
〃	4-130	AB		C
〃	4-131	AB		C
〃	4-132	AB		C
〃	4-133	AB		C
〃	4-134	AB		C
〃	4-135	AB		C
〃	4-136	AB		C
〃	4-137	AB		C
〃	4-138	AB		C
〃	4-139	AB		C
VCKYCY1HB472K	4-66	AA		C
VCKYCY1HB821K	5-18	AA		C
VCKYCY1HF104Z	4-3	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
〃	4-7	AA		C
〃	4-23	AA		C
〃	4-34	AA		C
〃	4-36	AA		C
〃	4-37	AA		C
〃	4-38	AA		C
〃	4-39	AA		C
〃	4-40	AA		C
〃	4-41	AA		C
〃	4-42	AA		C
〃	4-43	AA		C
〃	4-44	AA		C
〃	4-45	AA		C
〃	4-46	AA		C
〃	4-47	AA		C
〃	4-49	AA		C
〃	4-51	AA		C
〃	4-52	AA		C
〃	4-54	AA		C
〃	4-64	AA		C
〃	4-69	AA		C
〃	4-70	AA		C
〃	4-71	AA		C
〃	4-72	AA		C
〃	4-74	AA		C
〃	4-75	AA		C
〃	4-76	AA		C
〃	4-77	AA		C
〃	4-78	AA		C
〃	4-79	AA		C
〃	4-80	AA		C
〃	4-83	AA		C
〃	4-84	AA		C
〃	4-86	AA		C
〃	4-87	AA		C
〃	4-89	AA		C
〃	4-90	AA		C
〃	4-91	AA		C
〃	4-93	AA		C
〃	4-94	AA		C
〃	4-95	AA		C
〃	4-96	AA		C
〃	4-97	AA		C
〃	4-98	AA		C
〃	4-99	AA		C
〃	4-100	AA		C
〃	4-101	AA		C
〃	4-105	AA		C
〃	4-106	AA		C
〃	4-107	AA		C
〃	4-108	AA		C
〃	4-116	AA		C
〃	4-117	AA		C
〃	4-118	AA		C
〃	4-121	AA		C
〃	4-122	AA		C
〃	4-123	AA		C
〃	4-126	AA		C
〃	4-140	AA		C
〃	4-141	AA		C
〃	4-142	AA		C
〃	4-144	AA		C
〃	4-146	AA		C
〃	4-150	AA		C
〃	4-151	AA		C
〃	4-152	AA		C
〃	4-153	AA		C
〃	4-154	AA		C
〃	4-155	AA		C
〃	4-163	AA		C
〃	4-167	AA		C
〃	4-169	AA		C
〃	4-177	AA		C
〃	4-178	AA		C
〃	4-180	AA		C
〃	4-181	AA		C
〃	4-182	AA		C
〃	4-183	AA		C
〃	4-187	AA		C
〃	4-198	AA		C
〃	4-199	AA		C
〃	5-20	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
〃	8-5	AA		C
〃	8-6	AA		C
〃	8-7	AA		C
〃	8-8	AA		C
VCKYCY1HF473Z	8-4	AA		C
VCKYPA1HB103K	5-6	AA		C
VCKYTV1AF106Z	4-14	AC		C
〃	4-145	AC		C
〃	4-166	AC		C
〃	4-168	AC		C
〃	4-203	AC		C
VHD1N4148//-1	5-39	AA		B
〃	5-40	AA		B
〃	5-41	AA		B
VHD1SR154/4-1	4-226	AC		B
VHD1SS355//-1	4-227	AB		B
〃	4-229	AB		B
〃	4-230	AB		B
〃	4-231	AB		B
VHDRB715F//-1	4-228	AF		B
VHDSS14////-1	4-217	AF		B
〃	4-218	AF		B
〃	4-219	AF		B
〃	4-220	AF		B
〃	4-221	AF		B
〃	4-223	AF		B
〃	4-224	AF		B
〃	4-225	AF		B
VHDSS16////-1	4-222	AF		B
VHEHZ27-1//-1	5-88	AB		B
VHEHZ2C1///-1	5-85	AA		B
〃	5-86	AA		B
VHEHZ9C3///-1	5-87	AE		B
VHiBA178M24-1	4-393	AL	N	B
VHiF004/TC25F	4-239	BA	N	B
VHiF004/TC44B	4-239	BA	N	B
VHiNJM2113M-1	4-238	AG		B
VHiPC901054-1	4-240	AY		B
VHiSCE209L/-1	4-237	BK	N	B
VHPGP1S094HCZ	4-250	AG		B
〃	8-12	AG		B
VHPPS2501AL-1	5-44	AF		B
VHPSG206S//-1	5-45	AG		B
VHVRA391PV6-1	5-1	AE		B
VHVRA501PC6-1	5-2	AG		B
VRD-HT2EY101J	5-55	AA		C
VRD-HT2EY102J	5-54	AA		C
VRD-HT2EY151J	5-56	AA		C
VRD-HT2EY221J	5-51	AA		C
VRD-HT2EY223J	5-52	AA		C
VRD-HT2HY223J	5-57	AA		C
VRS-CY1JB000J	4-31	AA		C
〃	4-172	AA		C
〃	4-174	AA		C
〃	4-176	AA		C
〃	4-206	AA		C
〃	4-243	AA		C
〃	4-244	AA		C
〃	4-245	AA		C
〃	4-247	AA		C
〃	4-248	AA		C
〃	4-249	AA		C
〃	4-268	AA		C
〃	4-269	AA		C
〃	4-270	AA		C
〃	4-271	AA		C
〃	4-272	AA		C
〃	4-273	AA		C
〃	4-274	AA		C
〃	4-299	AA		C
〃	4-300	AA		C
〃	4-303	AA		C
〃	4-327	AA		C
〃	4-328	AA		C
〃	4-333	AA		C
〃	4-349	AA		C
〃	4-350	AA		C
〃	4-351	AA		C
〃	4-366	AA		C
〃	4-373	AA		C
〃	5-15	AA		C
〃	5-17	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
〃	5-25	AA		C
〃	5-61	AA		C
〃	5-67	AA		C
〃	5-72	AA		C
VRSCY1JB1000F	4-347	AA		C
VRS-CY1JB100J	4-324	AA		C
〃	4-368	AA		C
〃	4-369	AA		C
VRS-CY1JB101J	4-256	AA		C
〃	4-343	AA		C
〃	4-344	AA		C
〃	5-71	AA		C
VRS-CY1JB102J	4-261	AA		C
〃	4-264	AA		C
〃	4-304	AA		C
〃	4-321	AA		C
〃	4-329	AA		C
〃	4-331	AA		C
〃	5-59	AA		C
〃	5-74	AA		C
〃	5-83	AA		C
VRS-CY1JB103J	4-280	AA		C
〃	4-281	AA		C
〃	4-285	AA		C
〃	4-298	AA		C
〃	4-311	AA		C
〃	4-314	AA		C
〃	4-339	AA		C
〃	4-356	AA		C
〃	4-358	AA		C
〃	4-367	AA		C
〃	5-78	AA		C
VRS-CY1JB104J	4-302	AA		C
VRS-CY1JB105J	4-277	AA		C
〃	4-334	AA		C
VRS-CY1JB106J	4-296	AA		C
VRS-CY1JB113J	5-77	AA		C
VRS-CY1JB114J	4-355	AA		C
〃	4-360	AA		C
VRS-CY1JB121J	4-279	AA		C
VRS-CY1JB133J	4-361	AA		C
〃	5-79	AA		C
〃	5-81	AA		C
VRS-CY1JB150J	4-246	AA		C
VRS-CY1JB151J	4-278	AA		C
VRS-CY1JB153J	5-65	AA		C
VRS-CY1JB163J	5-69	AA		C
VRS-CY1JB183J	4-305	AA		C
VRS-CY1JB201J	4-257	AA		C
VRS-CY1JB202F	4-348	AC		C
VRS-CY1JB203J	4-301	AA		C
VRS-CY1JB222J	4-332	AA		C
VRS-CY1JB223J	5-64	AA		C
VRS-CY1JB224J	4-297	AA		C
〃	4-326	AA		C
〃	4-359	AA		C
VRS-CY1JB243J	5-63	AA		C
VRS-CY1JB271J	4-282	AA		C
〃	4-283	AA		C
〃	4-284	AA		C
〃	4-315	AA		C
〃	4-316	AA		C
〃	4-317	AA		C
〃	4-320	AA		C
〃	4-322	AA		C
〃	4-323	AA		C
〃	4-330	AA		C
〃	4-354	AA		C
VRS-CY1JB330J	4-276	AA		C
〃	4-286	AA		C
〃	4-287	AA		C
〃	4-288	AA		C
〃	4-294	AA		C
〃	4-308	AA		C
〃	4-319	AA		C
〃	4-325	AA		C
〃	4-335	AA		C
〃	4-336	AA		C
〃	4-337	AA		C
〃	4-338	AA		C
〃	4-340	AA		C
〃	4-341	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
〃	4-342	AA		C
〃	4-370	AA		C
〃	4-371	AA		C
〃	4-372	AA		C
VRS-CY1JB332J	4-265	AA		C
〃	4-357	AA		C
〃	4-362	AA		C
〃	5-66	AA		C
〃	5-68	AA		C
〃	5-76	AA		C
〃	5-80	AA		C
VRS-CY1JB391J	4-309	AA		C
〃	4-310	AA		C
VRS-CY1JB392J	4-345	AA		C
VRS-CY1JB393J	4-262	AA		C
〃	4-263	AA		C
〃	4-363	AA		C
〃	5-62	AA		C
VRS-CY1JB471J	4-289	AA		C
〃	4-290	AA		C
〃	4-292	AA		C
〃	4-318	AA		C
VRS-CY1JB473J	4-313	AA		C
〃	4-365	AA		C
VRS-CY1JB512J	4-312	AA		C
〃	4-352	AA		C
VRS-CY1JB513J	4-353	AA		C
VRS-CY1JB562J	4-275	AA		C
VRS-CY1JB621J	5-60	AA		C
〃	5-82	AA		C
VRS-CY1JB680J	4-291	AA		C
〃	4-293	AA		C
〃	4-295	AA		C
VRS-CY1JB752J	4-346	AA		C
VRSCY1JB7871F	4-364	AA		C
VRS-CY1JB822J	5-70	AA		C
VRS-CY1JB823J	4-306	AD		C
〃	5-73	AD		C
〃	5-75	AD		C
VRS-CZ1JB000J	8-16	AA		C
VRS-CZ1JB121J	8-19	AA		C
〃	8-22	AA		C
VRS-CZ1JB390J	8-13	AA		C
〃	8-14	AA		C
VRS-CZ1JB392J	8-15	AD		C
〃	8-17	AD		C
〃	8-18	AD		C
VRS-CZ1JB512J	8-20	AD		C
〃	8-21	AD		C
VRS-HT3AA510J	5-53	AA		C
VRS-HT3AAR91J	4-258	AB		C
〃	4-259	AB		C
〃	4-260	AB		C
〃	4-266	AB		C
VRS-HT3DA110J	4-255	AE	N	C
VRS-HT3DA221J	4-267	AB		C
VRS-RE2HA101J	5-58	AB		C
VS2SA1530AS-1	4-253	AC		B
VS2SC2411KR-1	4-254	AC		B
VSKTC3198GR-1	5-46	AD		B
VSRT1N141C/-1	4-251	AB		B
〃	4-252	AB		B
VSRT1N436C/-1	5-47	AD		B
〃	5-49	AD		B
〃	5-50	AD		B
VSRT1P141C+-1	5-48	AB		B
【 X 】				
XEBS720P06000	2-B1	AC		C
XEBS730P10000	1-B3	AC		C
〃	2-B2	AC		C
XEBS730P12000	1-B5	AC		C
XEPS726P04000	1-B8	AD	N	C
XHBS730P06000	1-B4	AC	N	C
XHBS730P10000	1-B6	AD		C
XUPSD30P10XS0	1-B9	AA	N	C
XWHSN40-08100	1-W1	AA		C
【 0 】				
0KYC10A9RQ221	6-7	AG		C
0KYC10Q1EQ101	6-10	AC		C
0KYC10Q2BQ104	6-14	AC	N	C
0KYC1102CC333	6-9	AC		C
0KYC1102EC472	6-8	AC		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
0KYC1384QL472	6-5	AH		C
〃	6-6	AH		C
0KYC2131QS104	6-3	AG	N	C
0KYC30A0BQ121	6-13	AG		C
0KYC30A0BQ471	6-12	AL		C
0KYC30A0EQ101	6-11	AH	N	C
0KYC3126KS121	6-4	AS		C
0KYD1057AQ006	6-22	AF		B
〃	6-23	AF		B
〃	6-24	AF		B
〃	6-25	AF		B
0KYD2049BQ202	6-26	AQ		B
0KYD2051AQ002	6-17	AD		B
〃	6-18	AD		B
〃	6-20	AD		B
0KYD20Q0AQ003	6-27	AL		B
0KYD4061AQ380	6-28	AK	N	B
0KYD4066AQ060	6-19	AF		B
0KYD4066AQ105	6-21	AF		B
0KYD7062AQ241	6-69	AH		B
0KYH1053AQ003	6-30	AP		B
0KYH7148AS003	6-35	AM	N	B
0KYK2051AQ002	6-15	AG		C
0KYK2148LS002	6-16	AG	N	C
0KYK7124AS2R5	6-29	AL		B
0KYL1173JL353	6-32	AS	N	C
0KYL2100DS007	6-67	AY		B
0KYL5051AQ001	6-1	AE		C
〃	6-2	AE		C
0KYR1053UQ100	6-51	AC		C
0KYR1053UQ562	6-55	AC	N	C
〃	6-56	AC	N	C
〃	6-59	AC	N	C
0KYR3111VC223	6-48	AB		C
0KYR3111VC272	6-63	AC	N	C
0KYR3111VC333	6-44	AB		C
0KYR3111VC682	6-46	AB		C
0KYR3111VC821	6-49	AB		C
〃	6-64	AB		C
0KYR3114VC103	6-47	AC		C
0KYR3114VC153	6-42	AC	N	C
0KYR3114VC562	6-66	AC		C
0KYR3114VC622	6-65	AC	N	C
0KYR3121TC000	6-41	AB		C
0KYR3121TC101	6-45	AB		C
〃	6-62	AB		C
0KYR3121TC681	6-50	AB		C
0KYR3121TC821	6-43	AC		C
0KYR3126TC184	6-39	AB		C
〃	6-40	AB		C
0KYR3131AC752	6-53	AC	N	C
〃	6-54	AC	N	C
〃	6-57	AC	N	C
〃	6-58	AC	N	C
〃	6-60	AC	N	C
〃	6-61	AC	N	C
0KYR3133AC225	6-38	AC		C
〃	6-52	AC		C
0KYR8054EQ102	6-68	AG	N	C
0KYT3563KL001	6-36	AT	N	B
0KYT4097CC002	6-37	AG		B
0KYW0000AQ005	6-33	AC		C
0KYW0000AQ012	6-34	AC		C
0KYW0000AQ015	6-31	AC		C

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A0405-DS•IS•T